

# PRIMARY 3 DISCOVER

TERM 2

2021-2022





## FOREWORD

**T**his is a pivotal time in the history of the Ministry of Education and Technical Education (MOETE) in Egypt. We are embarking on the transformation of Egypt's K-12 education system starting in September 2018 with KG1, KG2 and Primary 1 continuing to be rolled out year after year until 2030. We are transforming the way in which students learn to prepare Egypt's youth to succeed in a future world that we cannot entirely imagine.

MOETE is very proud to present this new series of textbooks, Discover, with the accompanying digital learning materials that captures its vision of the transformation journey. This is the result of much consultation, much thought and a lot of work. We have drawn on the best expertise and experience from national and international organizations and education professionals to support us in translating our vision into an innovative national curriculum framework and exciting and inspiring print and digital learning materials.

The MOETE extends its deep appreciation to its own "Center for Curriculum and Instructional Materials Development" (CCIMD) and specifically, the CCIMD Director and her amazing team. MOETE is also very grateful to the minister's senior advisors and to our partners including "Discovery Education," "Nahdet Masr," "Longman Egypt," UNICEF, UNESCO, and WB, who, collectively, supported the development of Egypt's national curriculum framework. I also thank the Egyptian Faculty of Education professors who participated in reviewing the national curriculum framework. Finally, I thank each and every MOETE administrator in all MOETE sectors as well as the MOETE subject counselors who participated in the process.

This transformation of Egypt's education system would not have been possible without the significant support of Egypt's current president, His Excellency President Abdel Fattah el-Sisi. Overhauling the education system is part of the president's vision of 'rebuilding the Egyptian citizen' and it is closely coordinated with the ministries of higher education & scientific research, Culture, and Youth & Sports. Education 2.0 is only a part in a bigger national effort to propel Egypt to the ranks of developed countries and to ensure a great future to all of its citizens.



# WORDS FROM THE MINISTER OF EDUCATION & TECHNICAL EDUCATION

**I**t is my great pleasure to celebrate this extraordinary moment in the history of Egypt where we launch a new education system designed to prepare a new Egyptian citizen proud of his Egyptian, Arab and African roots - a new citizen who is innovative, a critical thinker, able to understand and accept differences, competent in knowledge and life skills, able to learn for life and able to compete globally.

Egypt chose to invest in its new generations through building a transformative and modern education system consistent with international quality benchmarks. The new education system is designed to help our children and grandchildren enjoy a better future and to propel Egypt to the ranks of advanced countries in the near future.

The fulfillment of the Egyptian dream of transformation is indeed a joint responsibility among all of us; governmental institutions, parents, civil society, private sector and media. Here, I would like to acknowledge the critical role of our beloved teachers who are the role models for our children and who are the cornerstone of the intended transformation.

I ask everyone of us to join hands towards this noble goal of transforming Egypt through education in order to restore Egyptian excellence, leadership and great civilization.

My warmest regards to our children who will begin this journey and my deepest respect and gratitude to our great teachers.

**Dr. Tarek Galal Shawki**  
**Minister of Education & Technical Education**



NAME: -----

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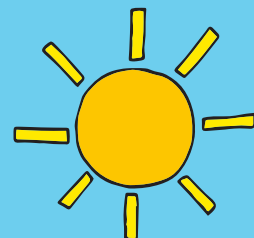
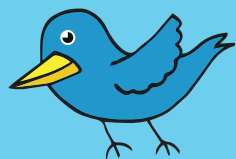
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# PATTERNS OF CHANGE







## VOCABULARY: ORIGIN

Complete the graphic organizer to help you learn the new word.

Definition	Examples (written or drawn)
Use it in a sentence	
<hr/> <hr/>	
Notes (clues to remember, synonyms, and so on)	



## YASMEEN IS GROWING

Read the story. Think about how Yasmeen has changed from when she was a baby.

“Mom, Mom,” called Rashad. “Yasmeen just rode her bike with two wheels.”

Yasmeen came running into the house behind Rashad. “I did it. I can finally ride a bike like Rashad.”

Mom smiled. “Wow. I am so proud of you. I remember when you were only a year old and had just learned to walk. Now you are riding a bike. Well done.”

“Yes,” Dad said, walking into the room. “You are growing and changing all the time. Do you remember when you were 3 years old and you learned how to float in the sea? You were scared, but you tried something new and learned to float in just a couple of hours.”

“I remember when you started talking right after you started walking,” recalled Rashad. “I had so much fun making you repeat what I would say.”

“I am growing so much every day. I am already in Primary 1. This is my third year in school. I wonder what I will be able to do in Primary 4 or even Preparatory 1. Come on Rashad, let’s go ride our bikes together,” called Yasmeen as she ran toward the door.



Answer the following questions after reading the story:

1. What new skills did Yasmeen learn? Why do you think she is able to do them now?

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2. How has Yasmeen changed from when she was a baby?

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3. What changes do you think will happen as Yasmeen finishes Primary 1?

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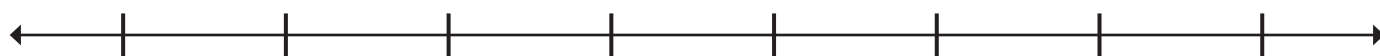
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## MY TIMELINE

Think of four important changes in your abilities as you have grown.  
Illustrate those four changes on your timeline.







SAME BUT DIFFERENT

Visit three different timelines. Record one similarity to and one difference from your own growth.

STUDENT NAME	SIMILARITY	DIFFERENCE



## A LITTER OF KITTENS

Follow along as your teacher reads.

Have you ever seen a litter of newborn kittens? A litter usually has between two and five kittens. All of the kittens in the litter have the same parents. The kittens look similar to their parents but not identical. The kittens also look similar to each other but not exactly the same. Why is this?

All types of living plants and animals can make more of their kind. When new living things are made, they are called offspring. Offspring look similar to their parents because parents pass inherited traits to their offspring. Traits are characteristics that make an organism look and behave the way it does. In kittens, fur color is a trait. Some kittens might inherit the same fur color as their mother. Other kittens might inherit the same fur color as their father.



*Kittens get the color of their fur from their parents. Kittens in a litter can look similar because they have the same parents.*

Kittens in a litter all have the same parents.

Each kitten receives some traits from its mother and some traits from its father. The parents pass different inherited traits to each kitten. So, each kitten receives a different combination of traits. This is why the kittens in a litter do not look exactly the same. Kittens do not receive all of their traits from their parents. The kittens can develop some traits as they grow and live in their surroundings. For example, a kitten's claws can be removed. Not having claws becomes one of the kitten's traits. However, this trait is not inherited. When the kitten grows and has its own offspring, they will still be born with claws.



## VOCABULARY: INHERITANCE

Complete the graphic organizer to help you learn the new word.

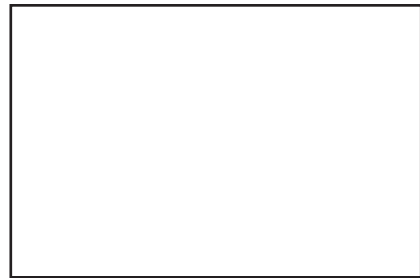
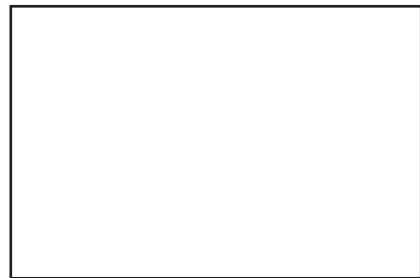
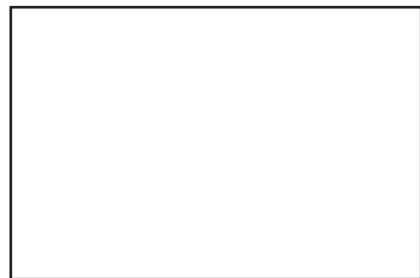
Definition	Examples (written or drawn)
Use it in a sentence	
<hr/> <hr/>	
Notes (clues to remember, synonyms, and so on)	





## FELINE PARENTS AND OFFSPRING

Observe the parents. Cut out the offspring images and match the offspring to its parent.







## PARENTS AND OFFSPRING

Read the text with a partner. Underline or highlight important facts about inherited traits.

All types of plants and animals can make more of their kind. These new living organisms are called offspring. All offspring are similar to their parents. Offspring look and behave in ways similar to their parents. Young zebras have stripes and eat grasses like their parents.



This happens because parents pass information to their offspring before the offspring are born. This information determines traits the offspring will have. Traits are characteristics or features that make an offspring look and act the way it does. For zebras, the pattern of stripes on their bodies is a trait.

Offspring usually get some traits from their mother and some from their father. In this way, the offspring are not exact copies of their parents. All zebras have stripes, but no two zebras have the exact same pattern of stripes.

Some traits passed down help plants and animals survive. Zebras have strong, large teeth that help them bite off and break down the tough grasses found in their habitat.





## DOUBLE ENTRY JOURNAL

In the first column, record an important fact you highlighted. In the second column, write what you think about the information you recorded.

IMPORTANT FACT	I THINK...



## HELP ME SURVIVE

Observe the images. Identify the inherited traits. Discuss how the traits could contribute to survival.




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## WHAT I THINK AND MY EVIDENCE

Observe the adult, then the offspring. Use what you know about inherited traits to answer the following questions.



1. Compare the adult with the offspring. In your own words, use what you know about traits to explain why they look alike in some ways but different in others.

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2. In a litter of jaguar cubs, would you be surprised if all the cubs were the same size and weight when they grow up? Why or why not?

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3. What inherited trait would be important for the jaguar's survival? Why?

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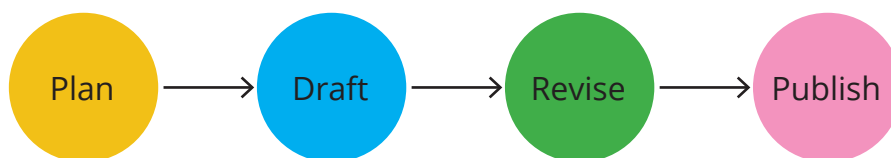
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## PLANNING MY STORY

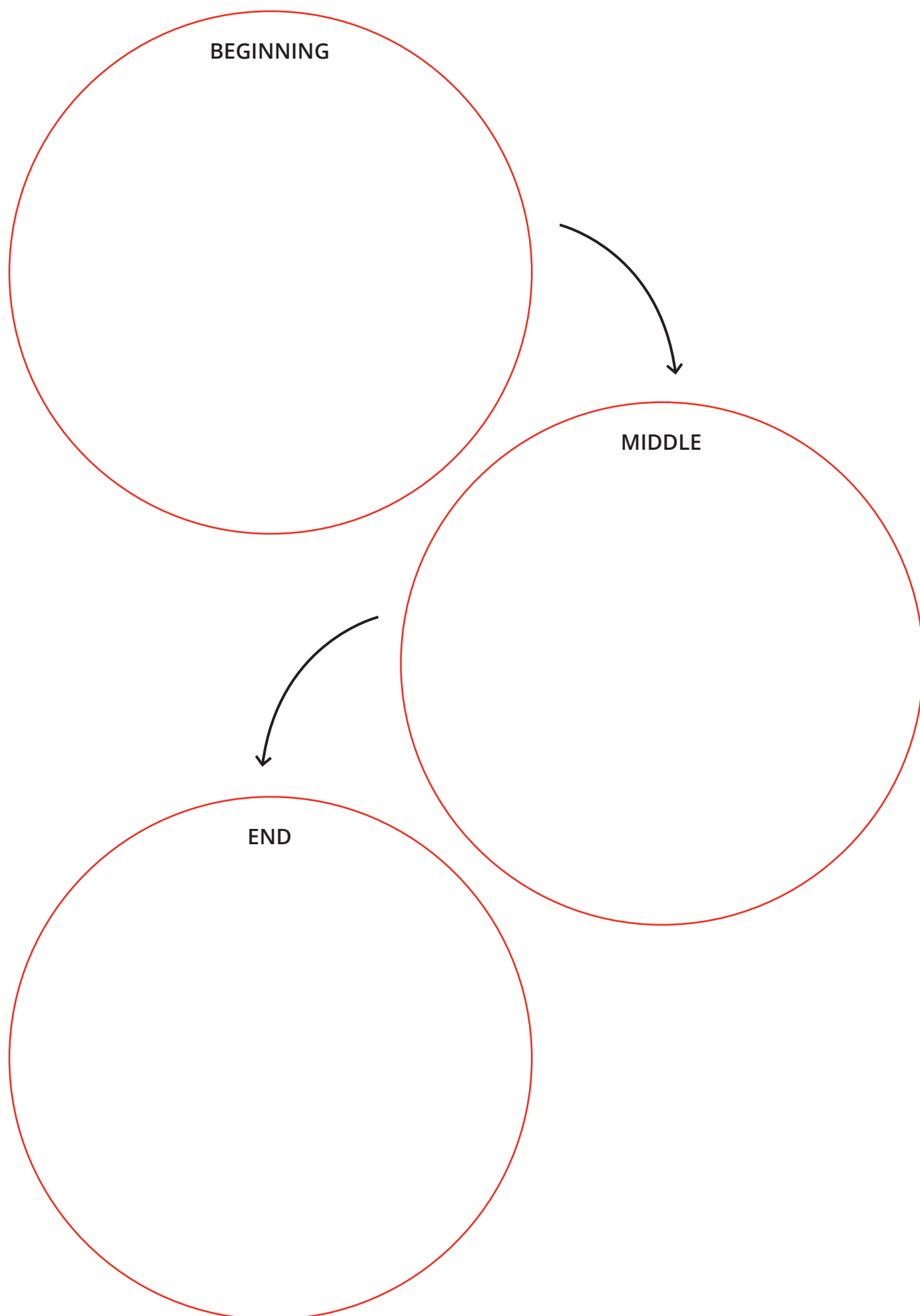
Use the graphic organizer to plan your story.



### CHARACTERS

### SETTING

### WAYS TO ADAPT TO ENVIRONMENT





**Write a first draft of your Rashad story.**

[illegible]



**Write your published version of your story.**

[illegible]



## ACACIA TREE AND WATER LILY

In each box, draw a picture of what your teacher describes.

### ACACIA TREE

### WATER LILY



## ANALYZING HISTORICAL INFORMATION

Use historical information to describe a water lily.



### The Water Lily (Lotus) in Ancient Egypt

Looking at many hieroglyphics, it is easy to see that the lotus (water lily) flower is common in ancient Egyptian works. The meaning of the lotus flower is associated with rebirth. This is because it closes up at night, and then reopens in the sun the next day. The ancient Egyptians associated the lotus flower with the sun, which also disappeared in the night only to reappear in the morning. Therefore, the lotus came to symbolize the sun and the creation.

What do you learn about the water lily from this textbook excerpt?

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Who do you think created this source?

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What do you learn about the water lily from this artwork?

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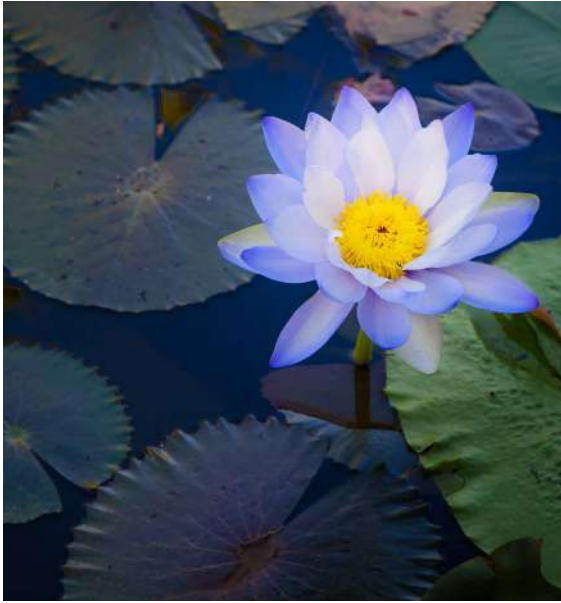
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Who do you think created this source?

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What do you learn about the water lily from this photograph?

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Who do you think created this source?

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What do you learn about the water lily from these artifacts?

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Who do you think created these sources?

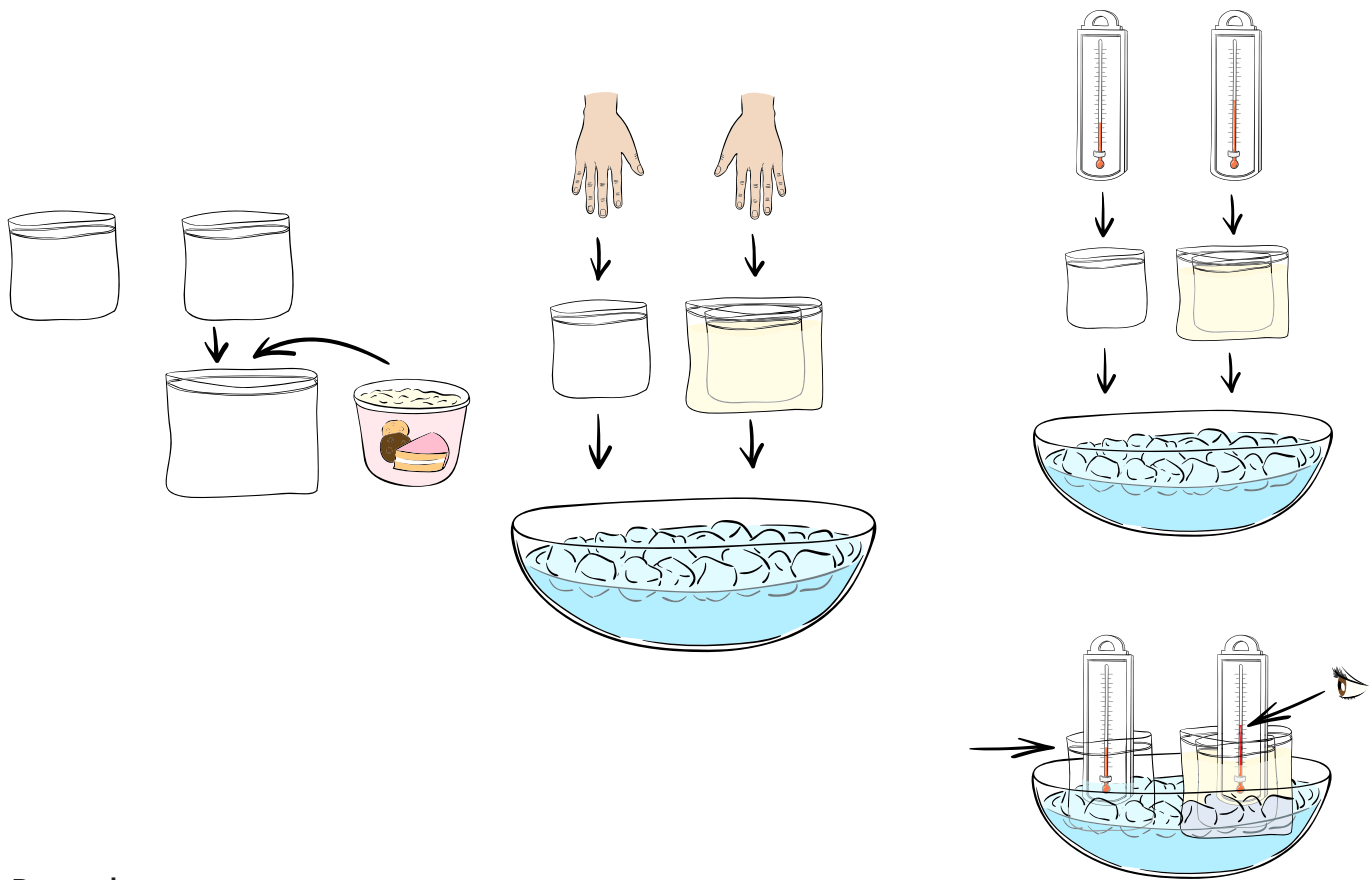
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## BLUBBER

Complete the experiment, record your data, and answer the questions.



### Procedure:

1. Place one hand in an empty plastic bag and the other in the double-walled shortening bag.
2. Place both hands with the bags over them into the ice water for a few seconds.
3. Do your hands feel the same or different in each bag? Record your observations.
4. Take the temperature of the inside of each bag by placing the bulb of the thermometer at the bottom of the bags, one at a time. Wait a few minutes and record the temperature. Repeat for the other bag.

### Observations:

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Data Table:

	TEMPERATURE (°C) INSIDE THE BAG
Empty plastic bag	
Plastic bag with shortening	

Analysis:

1. Describe the feeling inside each bag. Do your hands feel the same or different? How?

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2. Do the temperature readings support what you noticed when you put your hands in the bags? Explain.

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**FUN FACT**

Camels live in some of the hottest climates on Earth and carry up to 36 kilograms of fat just in the humps on their backs. Why? Fat is stored energy and water. Camels can survive for up to seven days with no water and three weeks with no food by breaking down the fat in their humps. The fat also helps them stay cool during the hot days and warm during the cool nights.



## ALL ABOUT BLUBBER

As you read the informational text, use the following colors to reflect on your learning. Mark the parts you can explain to someone else in blue. If there is something you are still confused about, mark it red. Use green to mark something new or exciting that you learned.

In the hands-on activity, vegetable shortening is used to represent blubber in the body. Vegetable shortening is a solid fat at room temperature. Like other fats, it is a great insulator. An insulator slows the movement of heat.

When you feel cold, heat is moving from your body to the environment. When you put your hand in the shortening bag and then in the ice water, your hand stays warm. You likely do not feel the icy cold water in the bowl. This is because the heat from your hands moves slowly into the shortening. When you put your hand in the empty bag and then into the water, you immediately feel cold. The heat from your hand moves quickly into the ice water.



An animal without enough insulation from fat, blubber, or fur might lose too much heat. If an animal's body temperature gets too low, it will not be able to move and live normally. Fat and blubber are very important to animals around the world.

The bodies of animals in cold climates have adapted over the course of many generations. Cold climate animals might have other adaptations too. Some can shiver to keep their muscles warm. Some fluff their feathers to trap warm air near the body. Some animals also have thick fur and extra layers of insulating blubber, so less heat escapes the body.



## CAN YOU SEE ME?

Circle the animals camouflaged in each picture. Then write a sentence to explain how camouflage can aid in survival.





## AROUND MY SCHOOL

Record characteristics of each habitat.

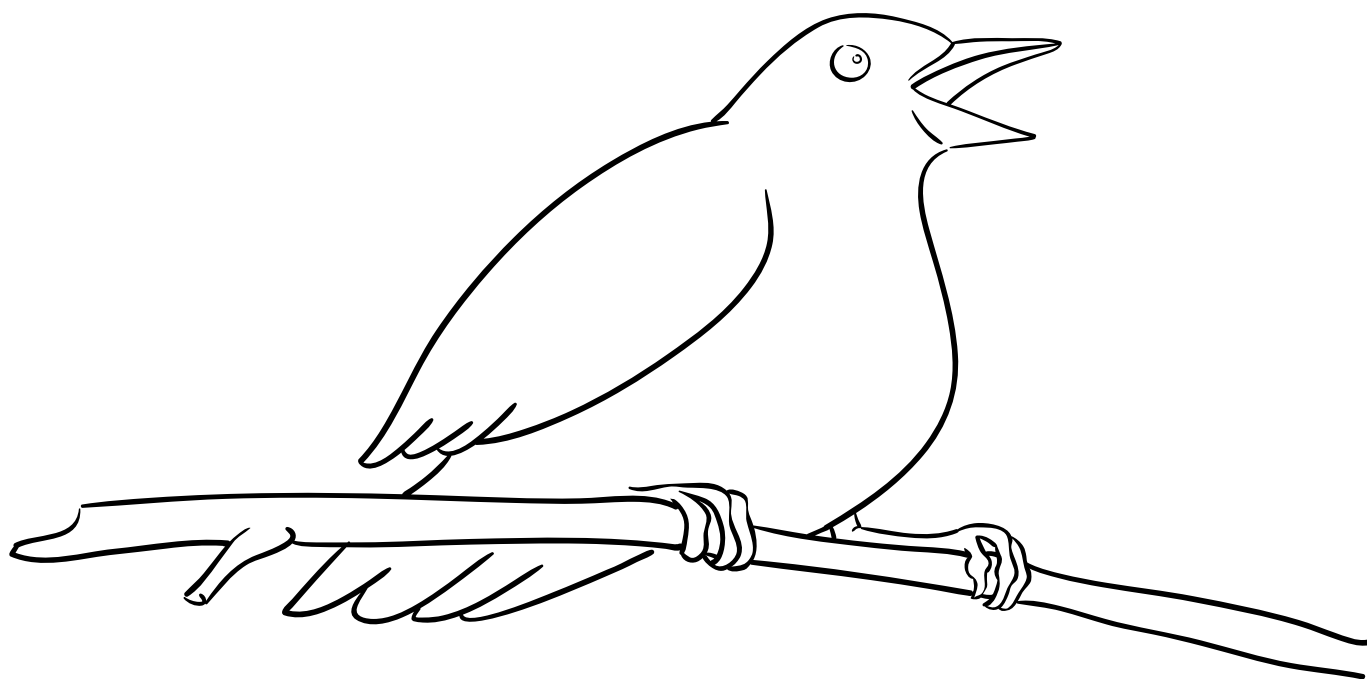
LOCATION	CHARACTERISTICS





## CAMOUFLAGE ME

Design a camouflage to help your bird blend into the selected habitat.  
Cut out the bird when you are finished.







## BEAKS

Refer to this page as you investigate bird beaks.

SPOON BEAK



SCISSOR BEAK



TWEEZER BEAK



CLOTHESPIN BEAK







## BEAK INVESTIGATION

Study the tools that represent the various beaks. Predict which you think will collect the most food. Follow instructions from the teacher for the investigation and record your data in the first table below. Use the reflection prompts to communicate your findings.

**Prediction:** I think the \_\_\_\_\_ beak will get the most food.

BEAK	PAPER CLIPS	RUBBER BANDS	TOOTH-PICKS	SMALL PASTA	SEEDS	DRY BEANS	RICE
_____							
_____							

**Class Data:** Add the three highest results for each beak type and each type of food, then enter the total on this table. For example, if the three highest numbers of paper clips collected by spoon beaks were 7, 6, and 5, you would enter 18 in the table where there is a star.

BEAK	PAPER CLIPS	RUBBER BANDS	TOOTH-PICKS	SMALL PASTA	SEEDS	DRY BEANS	RICE
Spoon	★						
Binder Clip/ Clothespin							
Tweezers							
Scissors							

**Reflection Prompts:**

**What I Learned:** Write a summary that describes what you learned from completing this activity. Remember to include examples from your data.

**What I Wonder:** Pose a “how” or “why” question that you may still have concerning the topic of this activity.

**Questions:**

1. Which beak was best adapted to each type of food? Why?

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2. Which beak was least adapted to each type of food? Why?

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FOOD	LEAST ADAPTED BEAK	BEST ADAPTED BEAK
Paper Clips		
Rubber Bands		
Toothpicks		
Small Pasta		
Seeds		
Dry Beans		
Rice		



3. Would you change your feeding strategy if you could do it again? Explain.

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## SING ME A SONG

Listen to each birdsong carefully. Choose two song elements to describe for each. Use words and other visual aids, such as lines or rhythm notations.

**Pitch:** high and low notes

**Tempo:** how fast or slow

**Melody:** a group of notes at different pitches

**Rhythm:** the length of time a note is played

Song 1

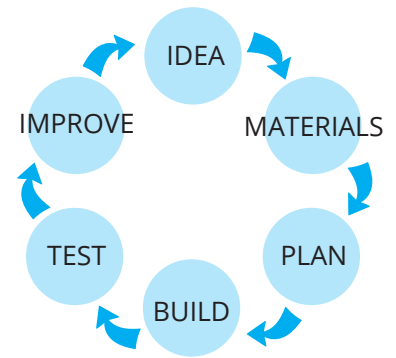
Song 2





## BUILDING A BETTER BEAK

Use these pages to brainstorm, plan, test, and improve your beak design.



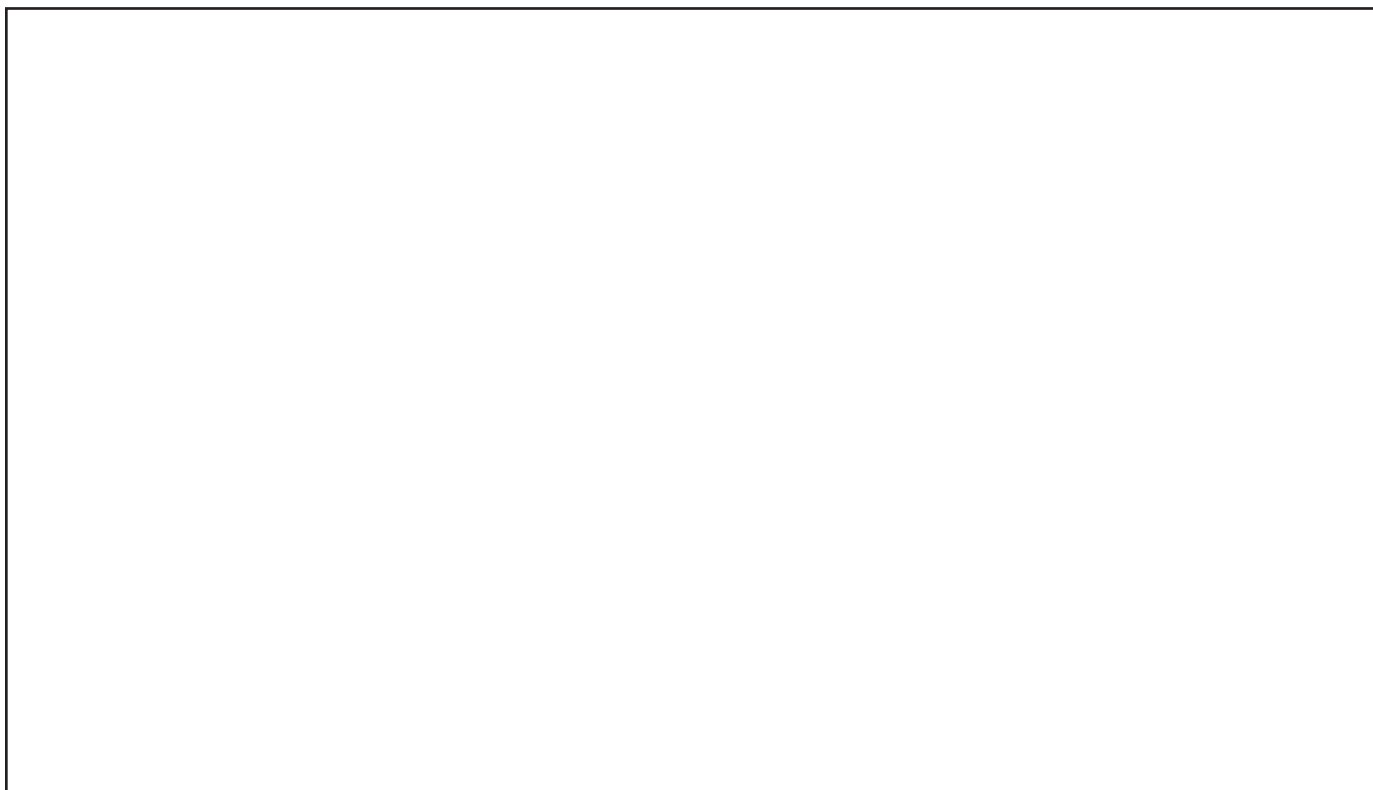
Ideas:

Materials I Will Use:

Plan:



Diagram of Beak:



Testing Notes:

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## IMPROVE AND TEST AGAIN

Pair up with another pair of students and share your beak design and results from previous testing. Ask for and give feedback.

I wish my beak would \_\_\_\_\_

Suggestions from others:

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Improvements I will make:

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**Test 2:** Record the amount of each food collected after improvements.

PAPER CLIPS	RUBBER BANDS	TOOTH-PICKS	SMALL PASTA	SEEDS	DRY BEANS	RICE

Summary of results:



## MY SELF-ASSESSMENT

Read each statement. For each row, color the stars in the box that describes your effort.

	★	★ ★	★ ★ ★
<b>Academic Content</b>	★ I can explain why different beaks are suited for eating different food sources with help.	★ ★ I can explain why different beaks are suited for eating different food sources.	★ ★ ★ I can explain why different beaks are suited for eating different food sources using specific details and a variety of examples.
<b>Quality of Performance</b>	★ I can create a birdsong that includes a pattern with varied pitch or rhythm with help.	★ ★ I can create a birdsong that includes a pattern with varied pitch and rhythm.	★ ★ ★ I can create a unique birdsong and can explain its pattern, including its varied pitch and rhythm.
<b>Life Skills</b>	★ I can use data and the ideas of others to improve a design with help.	★ ★ I can use data and the ideas of others to improve a design.	★ ★ ★ I can use data and the ideas of others to improve a design. I can assist classmates and lead in this area.

# Rubric Assessment (for teacher use)

	Approaching Expectation (1)	Meeting Expectation (2)	Exceeding Expectation (3)
Academic Content	Describes the kind of beak that is best suited to a given food source with support from peers or the teacher. <i>Science C.2.c.</i>	Describes the kind of beak that is best suited to a given food source. <i>Science C.2.c.</i>	Describes the kind of beak that is best suited to a given food source. Provides detailed evidence and/or multiple examples. <i>Science C.2.c.</i>
	Collects incomplete or inaccurate data about the effectiveness of the beak design and makes adjustments with support from peers or the teacher. <i>Science A.1.c., d.</i>	Collects accurate data about the effectiveness of the beak design. <i>Science A.1.c., d.</i>	Collects accurate data about the effectiveness of the beak design. Can articulate the relationships between the data collected and both design and improvements. <i>Science A.1.c., d.</i>
	Makes adjustments to the beak using data and classmate feedback with help from peers or the teacher. <i>Science F.1.c.</i>	Makes adjustments to the beak using data and classmate feedback. <i>Science F.1.c.</i>	Makes thoughtful adjustments to the beak using multiple data sets and classmate feedback. <i>Science F.1.c.</i>
	Creates music that includes varied pitch and rhythm with support from peers or the teacher. <i>Music A.1.</i>	Creates music that includes varied pitch and rhythm. <i>Music A.1.</i>	Creates and can explain or describe a piece of music that includes varied pitch and rhythm. <i>Music A.1.</i>
Quality of Performance	Shows creativity when creating a birdsong with support from peers or the teacher.	Shows creativity when creating a birdsong.	Shows exceptional creativity when creating a unique birdsong.
	Answers questions about the beak model or birdsong with support from peers or the teacher.	Answers questions about the beak model or birdsong.	Answers questions about the beak model or birdsong with evidence and detail. Serves as a role model for peers in this area.
Life Skills	Applies learning about adaptive traits to create a model of a beak with help from peers or the teacher. <i>Critical Thinking</i>	Applies learning about adaptive traits to create an appropriate model of a beak. <i>Critical Thinking</i>	Applies learning about adaptive traits to create a model of a beak in response to data collected through testing. <i>Critical Thinking</i>
	Gives feedback that shows little empathy and/or is not very kind. <i>Empathy</i>	Shows kindness and empathy when giving feedback. <i>Empathy</i>	Shows exceptional kindness and empathy when giving feedback. <i>Empathy</i>

# A NEW LOOK TO ANCIENT ART

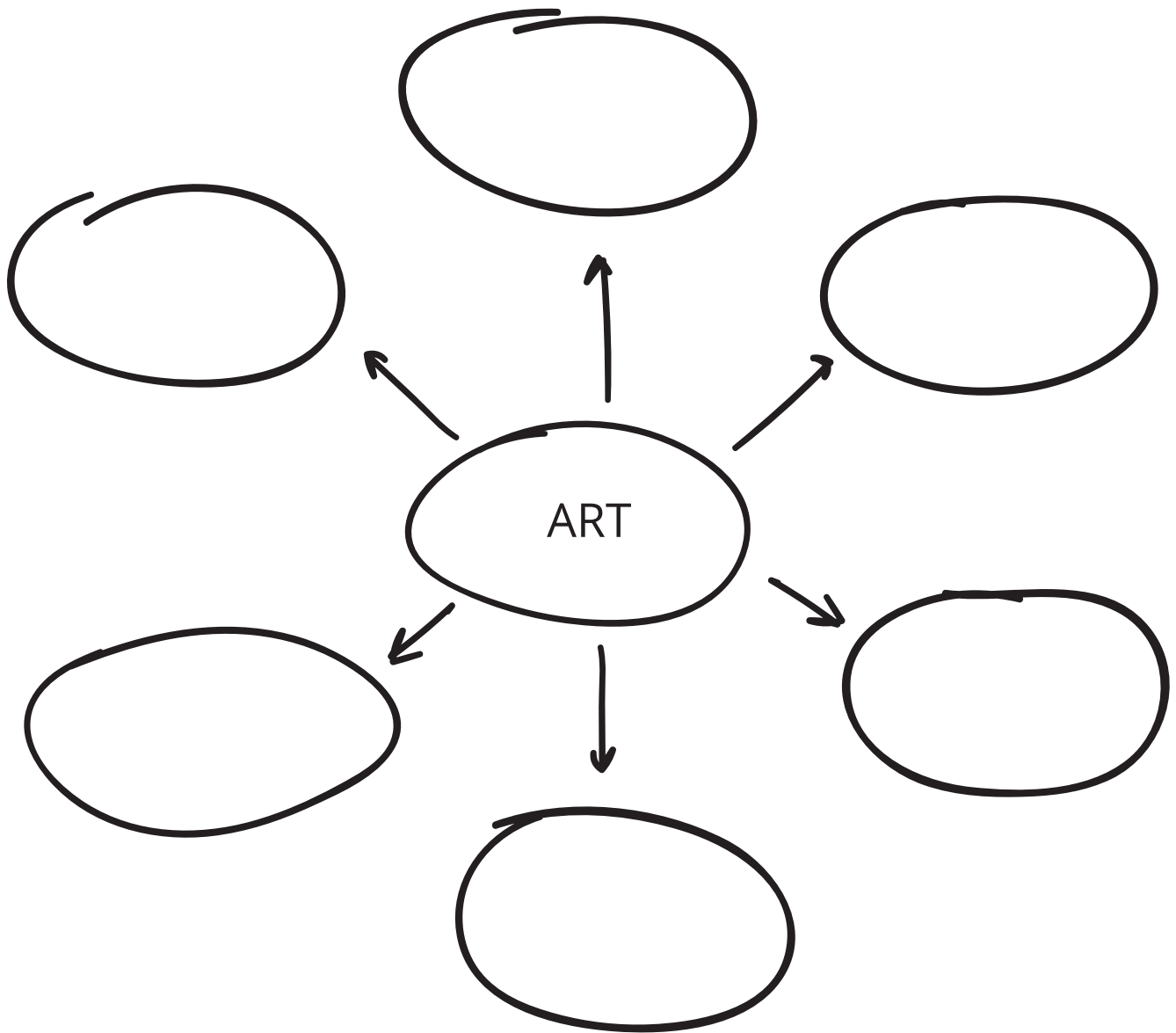






## ART WEB

Fill in the web by recording words or ideas about art.



Someone else thought of:

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## ALEXANDRIA NATIONAL MUSEUM

Follow along as your teacher reads. Underline art forms observed in the story.

Rashad and Zeina walked into the Alexandria National Museum with their class.

"I cannot wait to see all of the interesting artifacts from Alexandria a long time ago," exclaimed Rashad. Rashad loved history and knew he would learn a lot from the museum trip. Zeina was not as excited. "This museum is full of old things. I can read about history in a book," sighed Zeina.

In the first room, Rashad was impressed by the large sculptures of Egyptian rulers and some of the tools used during that time period. "I wonder what it would have been like to talk to this ruler," wondered Rashad. "I can show you where to read about them. Books can teach you all about what they were like," explained Zeina. Rashad pointed to the sculptures and portraits around the room. "But don't you think this is more interesting? I like seeing what they might have looked like," answered Rashad. Zeina just shrugged her shoulders.

As they continued through the museum, Rashad slowed down to examine the canopic jars made from clay. "Zeina, look at these. They were part of the tombs."

"Let's keep going Rashad. Thinking about the tombs is a little scary," said Zeina.

On the third floor they found a room filled with jewelry. "Wait. What are these? They are so colorful and detailed," said Zeina. She paused to examine the necklaces and bracelets. "The sign



says these are all from the royal family of Muhammad Ali. Isn't the detail amazing? I love all of the patterns and colors. Sometimes jewelry really looks like art," said Rashad.

"I could look at these all day. Rashad, was the jewelry from Ancient Egypt this detailed?" asked Zeina. "Of course. The jewelry is even more amazing because it was made so long ago," Rashad explained. "I would be interested in learning more about that. Let's keep going," Zeina said as she eagerly pulled Rashad's arm.



## UNDERSTANDING THE CHARACTERS

Complete the chart below using the events from the story.

ART FORM

Rashad feels:

Action:



Zeina feels:

Action:



ART FORM

Rashad feels:

Action:



Zeina feels:

Action:



ART FORM

Rashad feels:

Action:



Zeina feels:

Action:







## WHEN WAS IT MADE?

Cut out the images on this page and the next. Collaborate to estimate when each was created and place them in order from oldest to newest on the timeline provided.

**A****B****C****D**





E



F



G



H





## WHEN WAS IT MADE?: TIMELINE

Arrange the artifact images from oldest to newest on the timeline below using your estimates. Rearrange and add labels as the teacher provides actual dates.





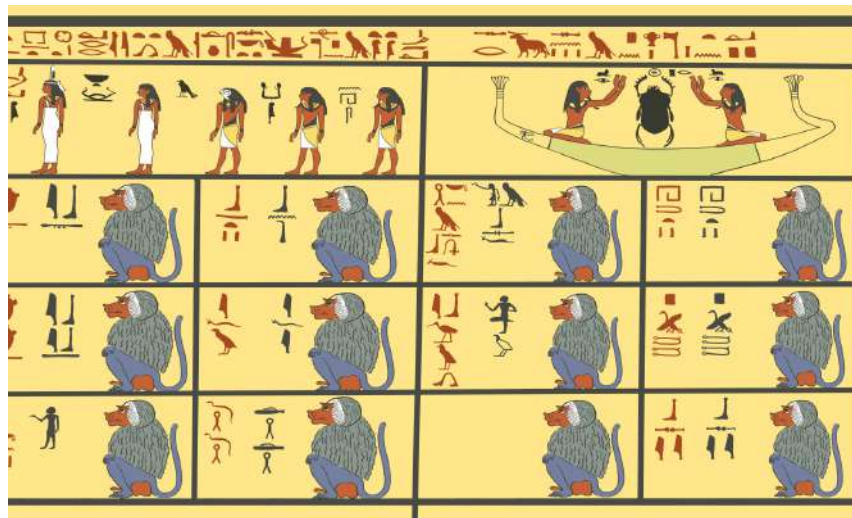
## TUTANKHAMUN

Calculate the area of the wall painting. Then, use fractions to describe sections of the second wall painting.



\_\_\_\_\_

Calculate the area:



\_\_\_\_\_

Calculate the area:





## ANCIENT EGYPTIAN JEWELRY

List the common colors you see.



Colors: \_\_\_\_\_

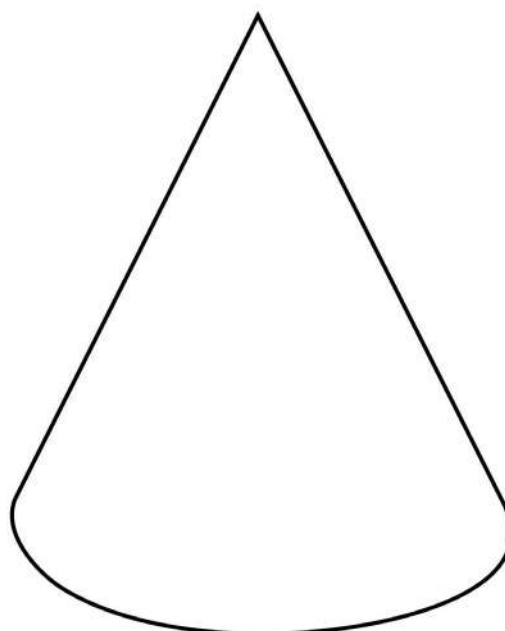
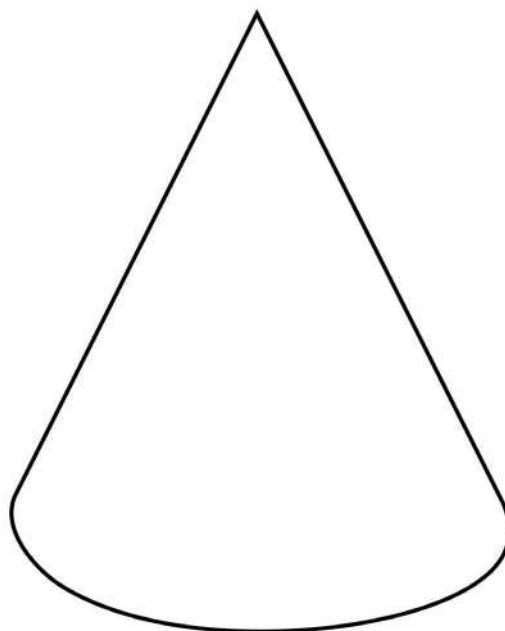


Colors: \_\_\_\_\_



## IT IS BLACK AND WHITE

Practice creating gradients in the right-hand column.

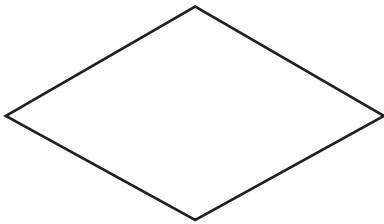
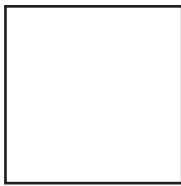
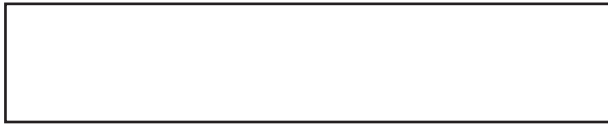






## GEOMETRIC SHAPES

Label the shapes. Design an original pattern for a bracelet or cuff using geometric shapes.




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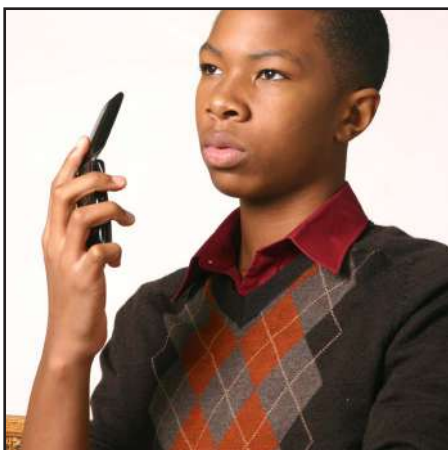






## GEO CLOTHES

Write the names of geometric shapes you see.



Names of geometric shapes:



## RAW MATERIALS

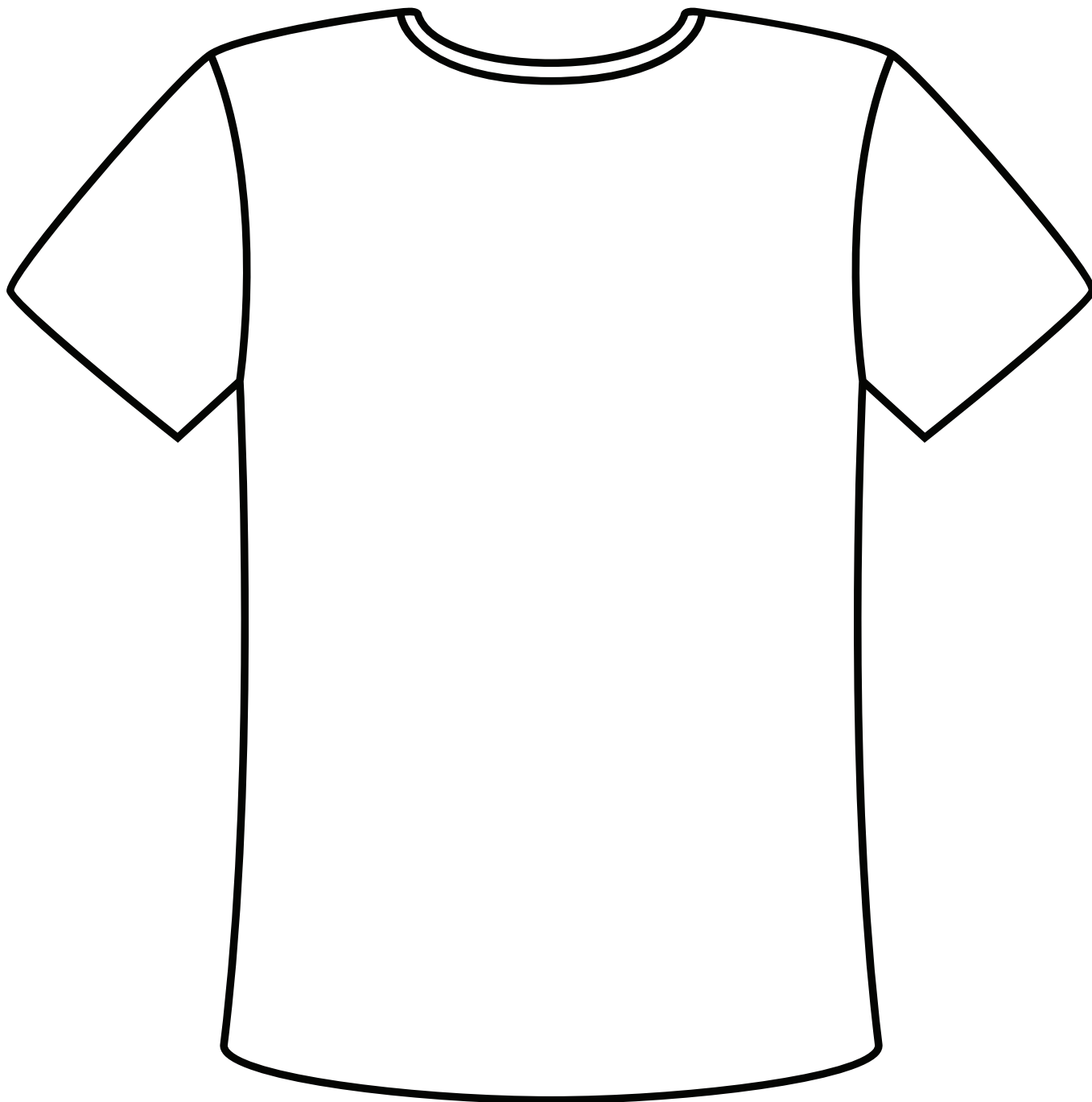
Label the raw materials, then match each to its finished product.

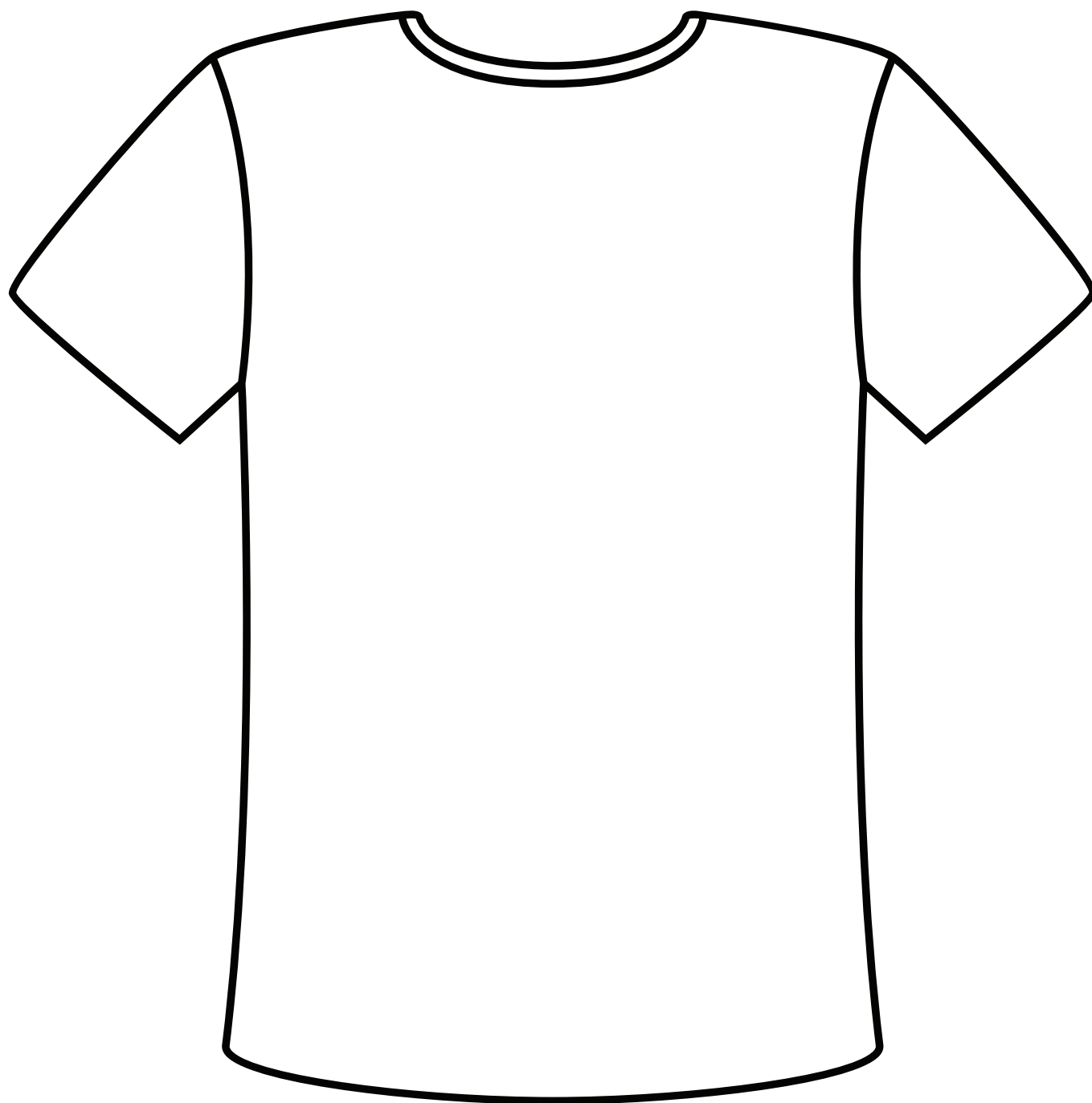




## FASHION FUN

Use finger printing to create a pattern on the shirt outline. Then use block printing to create the same pattern on the next shirt outline.







## ORIGINS OF EGYPTIAN MUSIC

Describe the instruments you see pictured.





## MUSICIANS AND ARTISTS

Research one musician and one artist and record information on the graphic organizer.

The graphic organizer consists of several colored shapes for taking notes:

- Type of Music:** A light blue oval at the top right.
- Name of Musician:** A green cloud shape on the left.
- Born:** Inside the green cloud shape.
- Died:** Inside the green cloud shape.
- From:** Inside the green cloud shape.
- Picture:** A pink rectangular box on the right.
- Road to Success:** An orange cloud shape in the center-right, containing the text "How did they become famous? What awards have they won?".
- How their work makes me feel:** A purple oval on the left.
- If I were a musician...** A yellow starburst shape at the bottom left.
- Other things I learned:** A pink hexagonal shape at the bottom center.
- Question I would ask them:** A light blue oval at the bottom right.
- Something else I would like to know about them:** A large pink rectangular box at the bottom left.

Type of Art:

Name of Artist:

Born:

Died:

From:

Picture:

How their work makes me feel:

Road to Success:  
How did they become famous? What awards have they won?

If I were an artist...

Other things I learned:

Question I would ask them:

Something else I would like to know about them:



## PRESENTATION REFLECTIONS

Listen carefully to presentations about different musicians and artists. Record your thoughts below.

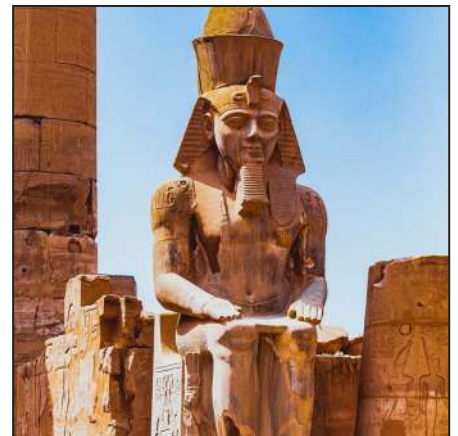
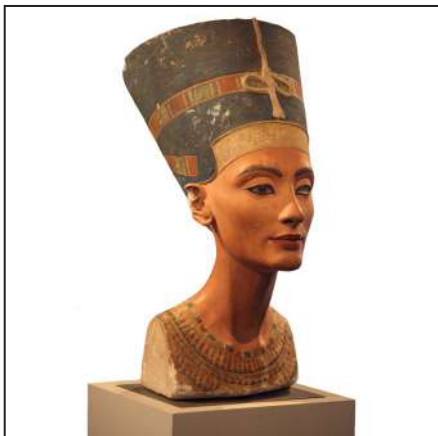
Notes:

Song Lyrics:



## SCULPTURE IN ANCIENT EGYPT

Look carefully at the pictures and record your observations.



Observations:



## MODERN DAY SCULPTURES

Look carefully at the pictures and record your observations.



Observations:



## PLANNING MY SCULPTURE

Use the graphic organizer to plan your sculpture.

Animals I will use:

Animal characteristics:

Drawing of sculpture:

Legend:



## ART REFLECTIONS

Answer the questions to reflect on your sculpture.

What materials did you use and why?

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What adhesives did you use and did they work?

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What meaning or message did you want to share?

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Are there parts of your sculpture you especially like?

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Is there anything you would change? Why?

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## WORKING AS A TEAM

Read through each statement as a class. Then, think of one more goal you can set to be a good member of your group. Sign your name at the bottom.

I will stay focused on my group project.

I will communicate my ideas and thoughts with the group.

I will work with my group to set goals for our project.

I will listen and respect other opinions.

I will be considerate of others' feelings.

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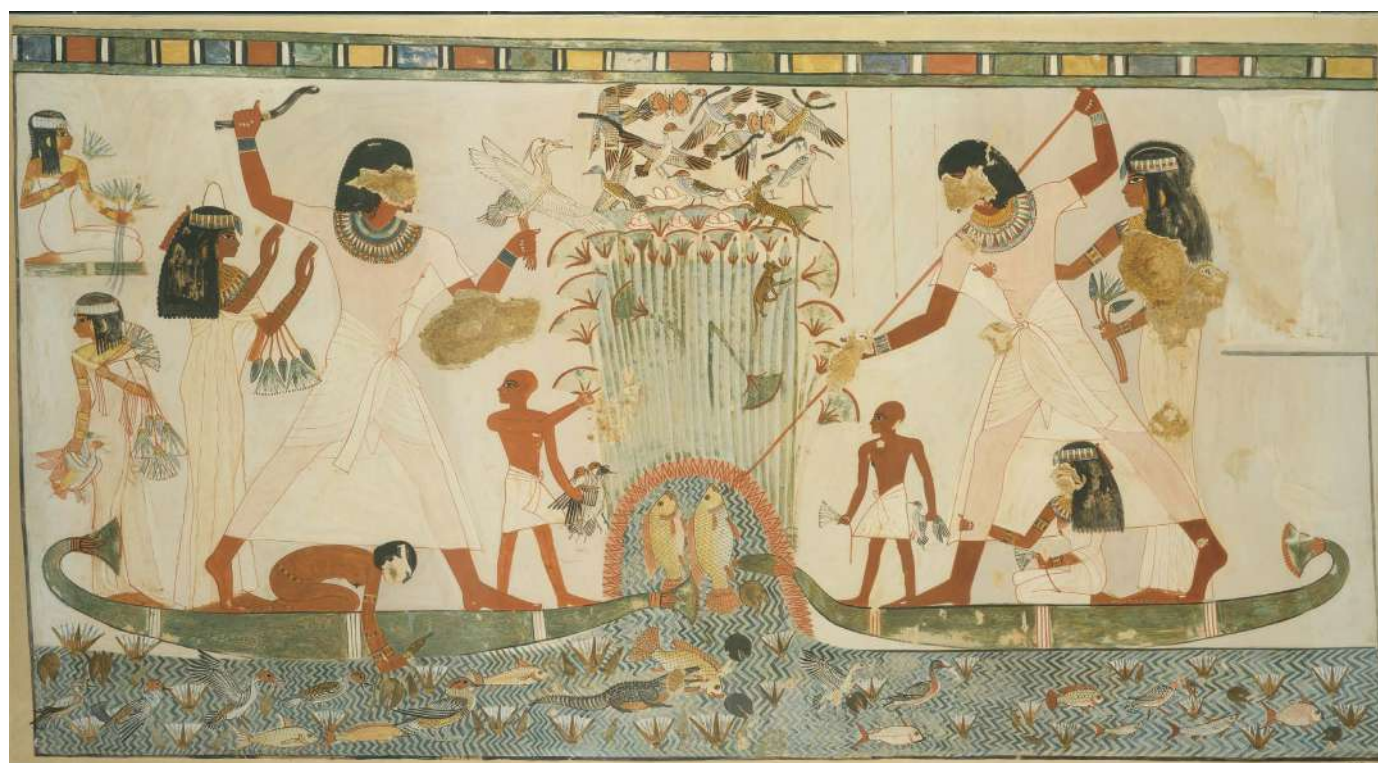
My signature: \_\_\_\_\_



## ANCIENT PAINTINGS

Observe the paintings.







## PARTS OF THE PAINTING

List the characters and setting of the painting. Then write sentences to describe what is happening.

CHARACTERS	SETTING

### EVENTS

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## PLANNING THE STORY

On your own, draw or write ideas for the story.

First:



Then:



Next:



So Now:



Finally:



## DIALOGUE

Write the dialogue for each part of the play.

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## PLANNING MY PROP

Draw a picture to show the prop you will create. List the materials you will need.

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## MY SELF-ASSESSMENT

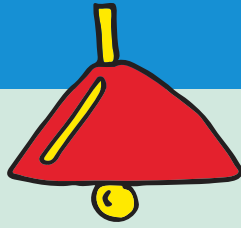
Read each statement. For each row, color the stars in the box that describes your effort.

	☆	☆☆	☆☆☆
<b>Academic Content</b>	☆ I can work with my team to create a play based on a work of art but have difficulty contributing ideas.	☆ ☆ I can successfully contribute ideas to create a play based on a work of art.	☆ ☆ ☆ I can successfully contribute detailed ideas to create a play based on a work of art. I can assist classmates and lead in this area.
<b>Quality of Performance</b>	☆ I have a hard time using my voice and body language to enhance my performance.	☆ ☆ I can use my voice and body language to enhance my performance.	☆ ☆ ☆ I can use my voice and body language to express the emotions of my character and enhance my performance.
<b>Life Skills</b>	☆ I can set goals that help me work successfully with my team with help.	☆ ☆ I can set goals that help me work successfully with my team.	☆ ☆ ☆ I can set goals that help me work successfully with my team. I can assist classmates and lead in this area.

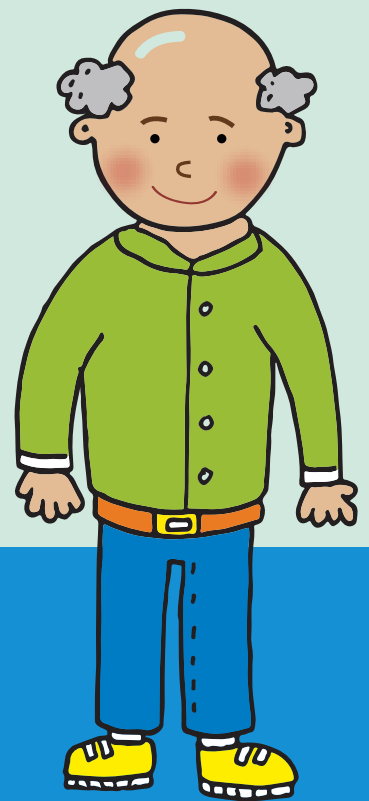
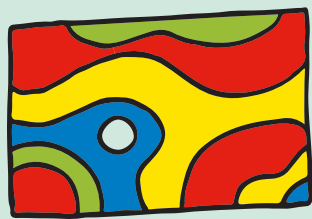
# Rubric Assessment (for teacher use)

	Approaching Expectation (1)	Meeting Expectation (2)	Exceeding Expectation (3)
Academic Content	Contributes minimally or only with teacher assistance to create dialogue that expresses the story told in the play. <i>Drama B.2., 3.</i>	Contributes to create dialogue that expresses the story told in the play. <i>Drama B.2., 3.</i>	Contributes original and insightful dialogue that expresses the story told in the play, and assists peers in converting ideas into dialogue. <i>Drama B.2., 3.</i>
	Creates a narrative about imagined events related to the piece of artwork with little detail or with help from peers or the teacher. <i>Writing B.1.a.</i>	Creates a narrative about imagined events related to the piece of artwork that features descriptive details. <i>Writing B.1.a.</i>	Creates an especially creative, detailed narrative about imagined events related to the piece of artwork. <i>Writing B.1.a.</i>
	Develops a story that contains five events in an unclear progression or with help from peers or the teacher. <i>Writing B.1.d.</i>	Develops a story that contains five events in a natural progression. <i>Writing B.1.d.</i>	Develops an engaging story that contains five events in a clear and thoughtful progression. <i>Writing B.1.d.</i>
	Plans and creates a sculpture to use as a prop for the play with help from peers or the teacher. <i>Visual Art A.3.c.</i>	Plans and creates an appropriate sculpture to use as a prop for the play. <i>Visual Art A.3.c.</i>	Plans and creates an especially creative sculpture to use as a prop for the play and incorporates other artistic skills, such as block printing or geometric patterns. <i>Visual Art A.3.c.</i>
Quality of Performance	Creates scenery that demonstrates a minimal understanding of how to create different gradients from basic colors.	Creates scenery that demonstrates an understanding of how to create a variety of gradients from basic colors.	Creates scenery that demonstrates an advanced understanding of how to create a variety of gradients from basic colors.
	Uses minimal expression of voice and body during the play. <i>Speaking and Listening A.4.a.</i>	Uses appropriate expression of voice and body to enhance the dialogue of the play. <i>Speaking and Listening A.4.a.</i>	Uses exceptional expression of voice and body to build a sense of character and enhance the dialogue of the play. <i>Speaking and Listening A.4.a.</i>
Life Skills	Collaborates with teammates but may have difficulty soliciting and/or showing respect for the ideas of others. <i>Respect for Diversity</i>	Collaborates effectively by soliciting and showing respect for the ideas of others. <i>Respect for Diversity</i>	Collaborates effectively by soliciting and showing respect for the ideas of others. Takes on a leadership role and helps organize the team in this work. <i>Respect for Diversity</i>
	Offers feedback that contributes to the success of the team with help from peers or the teacher. <i>Accountability</i>	Offers helpful feedback that contributes to the success of the team. <i>Accountability</i>	Offers helpful and insightful feedback that contributes to the success of the team and demonstrates empathy. <i>Accountability</i>





# ORIGINS OF MEDICINE







## RASHAD IS SICK: CHAPTER 1

Read the story.

### *WARM TEA*

When Rashad woke up, his body still felt tired and his throat was sore. Rashad slowly got out of bed and made his way down the hallway from his bedroom.

"Mom, I do not feel very good this morning," Rashad moaned.

Rashad's mom looked at him as he slowly moved into the kitchen. She felt his head. "Hmmm. You feel a little warm. I will take your temperature," she said, as she left the room to get the thermometer.

Rashad's grandma looked up from the kitchen table where she was eating breakfast. "If your throat is sore, you should sip on tea. It is warm and will make your throat feel better. I do it every time my throat starts to hurt, and it always feels better. It is how my mother treated my sore throat and it is what I would do for your father when he was a child. I can make you some if you like."

"I do not know. I do not like how the tea tastes," complained Rashad. "Is there anything else I can do to feel better?"







## ONCE WHEN I WAS SICK...

Write the beginning, middle, and end of a story to share a time you were sick and what you did to feel better.

Beginning

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Middle

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End

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## RASHAD IS SICK: CHAPTER 2

Read the story.

### *THE COMMERCIAL*

"You have a fever, darling. No school for you today. Go lie down on the sofa and I will be in with a cold towel for your head. It will help your fever," instructed Rashad's mom.

Rashad turned on the TV and lay on the sofa. A commercial came on the screen.

"Headache? Body hurts? Fever? Just take a couple of these, your fever will be gone, and you will be ready to start your day. This is the best medicine you can take. No prescription needed. You can buy a bottle at a nearby pharmacy. Go now. Do not wait to feel better," the commercial called out from the screen.

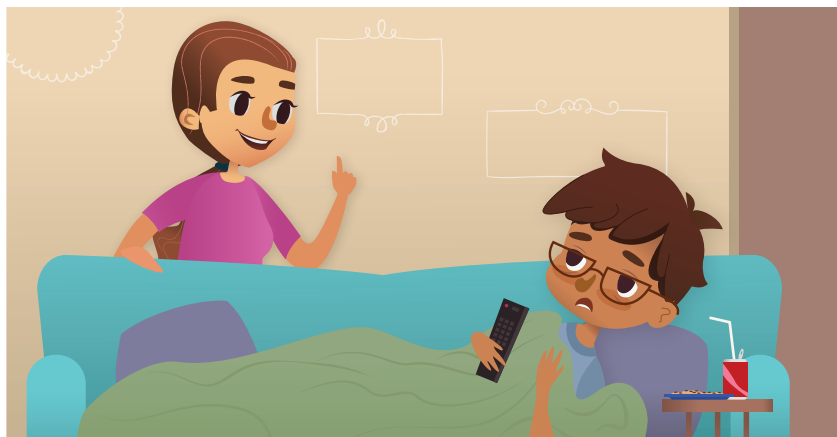
When Rashad's mom came back into the room with a cold towel, Rashad asked her if they had the medicine featured in the commercial.

"The commercial just told me it will make my fever go away. It probably works better than a cold towel. I do not like putting a cold towel on my head. It gets me all wet," whined Rashad.

"No, we do not. I do not like that medicine. It makes you feel too drowsy," explained Rashad's mom.

"Hmm. The commercial did not say that. Well, is there anything else I can take to feel better? I hate feeling sick," Rashad said.

"Let me think a moment. I want to try a few other treatments at home before we go buy any medicine. I will go read some suggestions online," replied his mom.







## RASHAD IS SICK: CHAPTER 3

Read the story.

### *CARROTS?*

After school, Yasmeen came bouncing into the room where Rashad was lying down.

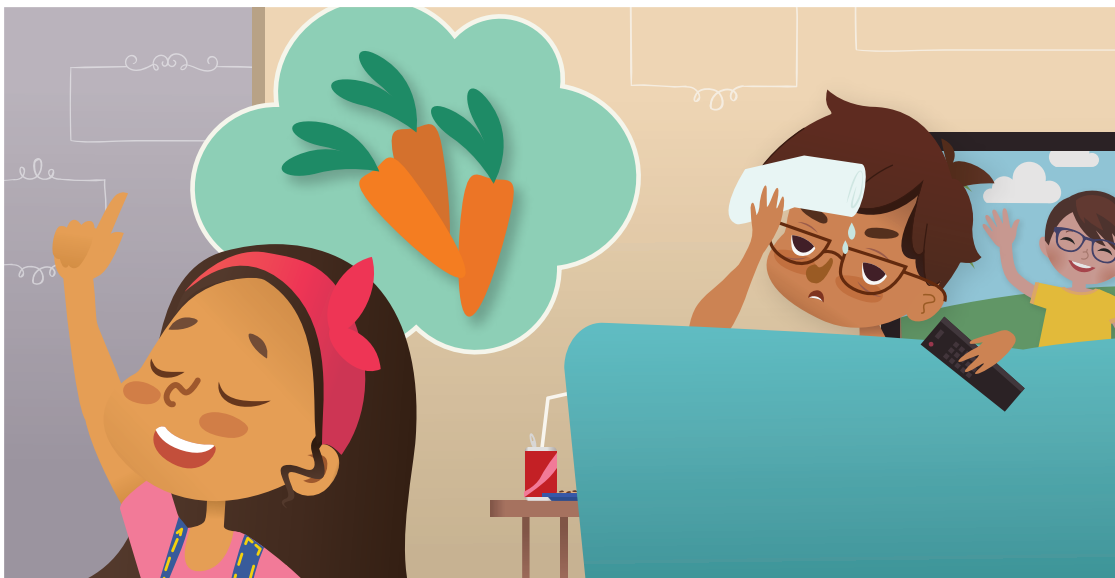
"I know what will make you feel better. I read a story at school about a sick bunny. The bunny's mom gave it lots of yummy carrots and then the bunny felt all better. I will go find you lots of carrots," called Yasmeen as she hurried into the kitchen. "I can help. I can be a doctor," Yasmeen sang in the kitchen.

"Ugh. I do not want carrots. I just want to feel better," groaned Rashad.

Rashad's dad came to check on Rashad. "You do not look so good. I think you need more than a cold towel for your fever or a warm drink for your sore throat."

Rashad's mother joined them near the couch.

"I think we should take him to the doctor if his fever is not gone by this evening," said his father. "The doctor will know how to make Rashad feel better."







## FACT, FICTION, OPINION

Read each statement. Decide whether the statement is fact, fiction, or opinion, and then write your answer next to the statement.

Fact

Fiction

Opinion

1. Exercising is a healthy habit. \_\_\_\_\_
2. Eating healthy food is the best thing you can do for your body. \_\_\_\_\_
3. Jumping rope is the most fun way to exercise. \_\_\_\_\_
4. Eating sugary cookies will make me as strong as a superhero. \_\_\_\_\_
5. Getting enough sleep is important to my health. \_\_\_\_\_
6. Skin protects our body. \_\_\_\_\_
7. Taking brain breaks is a fun way to help me focus. \_\_\_\_\_



## STATEMENTS ABOUT MY HEALTH

Write one sentence in each category about your own health.

Fact:

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Fiction:

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Opinion:

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## TREATMENT OPTIONS

Use the first three chapters of the Rashad story to complete the chart.

SOURCE FOR INFORMATION	TREATMENT	FACT, FICTION, OPINION?

Complete the sentence to answer the question: Which treatment do you think Rashad should choose?

I think Rashad should \_\_\_\_\_

\_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_ .



## IMHOTEP

Follow along as the text is read aloud. Complete the 3-2-1 reflection.

The Edwin Smith Papyrus is known around the world for its descriptions of ancient Egyptian surgical and medical practices. The papyrus is dated to between 1500-1700 BCE, but it may be a copy of a text from even earlier. It is not clear whether Imhotep himself, or his students or followers, wrote the text.

The Edwin Smith Papyrus describes almost 100 terms for body parts. It also describes at least 48 injuries and ways to treat them. An interesting part of this text is the modern approach it takes to treating injuries. Every injury is described with the treatment, a likely outcome, and notes.

The examinations described by the papyrus follow a process similar to modern doctors. People are asked where they are hurt or feel pain. This question is followed by an examination of the injury when possible. A likely outcome is recorded after every entry. Each record begins with the phrase, "An ailment I will handle," or "An ailment I will fight with," or "An ailment for which nothing can be done."

Imhotep may have identified and treated over 200 diseases in his lifetime. His scientific approach to illness and injury eventually became a foundation for modern medical fields.

3

FACTS I LEARNED

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2

FACTS I FOUND  
INTERESTING

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---

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1

QUESTION I  
STILL HAVE

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## BREAD EXPERIMENT

Record your observations and draw a picture of what you see.

	OBSERVATIONS AND DIAGRAMS	
	Not Cleaned Hands	Cleaned Hands
DAY 1		
DAY 2		
DAY 3		

	OBSERVATIONS AND DIAGRAMMS	
	Not Cleaned Hands	Cleaned Hands
DAY 4		
DAY 5		
DAY 6		
DAY 7		





# IMAGES FOR TIMELINE

Create images for our timeline. Record the time period in the bottom-right corner of each picture.

IMHOTEP	<div></div>	PAPYRI	<div></div>	LIBRARY OF ALEXANDRIA	<div></div>
HOSPITALS	<div></div>	MEDICAL TOOLS	<div></div>		





## THE EBERS PAPYRUS

Read the text, then compare this papyrus with the Edwin Smith Papyrus.

The Ebers Papyrus is an ancient medical document that includes over 842 cures for illnesses and injuries.

It is named for the famous Egyptologist, Georg Ebers. The papyrus may have been created between 1550-1538 BCE during the reign of Amenhotep I. It is about the same age as the Edwin Smith Papyrus.

The Ebers Papyrus has an entire section called, “the book of hearts.” It describes how blood reaches every part of the human body through vessels. Other parts of the papyrus suggest magical spells. This papyrus has both scientific and magical ways to identify and cure diseases.

One cure for a headache suggests mixing various herbs, seeds, flour, and other ingredients with water, then applying the paste to the head. Apply to the head.



*An artisan constructing papyrus. What would you record on papyrus?*

Compare Ebers Papyrus and Edwin Smith Papyrus

SIMILAR	DIFFERENT



## PRIMARY AND SECONDARY SOURCES

Circle the secondary sources.

<p>I was watching TV and one of the reporters said I should see a movie she really liked.</p> <p><b>Source:</b> a movie recommendation</p>	<p>My sister left a letter she wrote to her best friend on the kitchen table.</p> <p><b>Source:</b> a letter</p>
<p>I was playing with my cousins and found my grandparents' marriage certificate.</p> <p><b>Source:</b> government document</p>	<p>At school we use textbooks to learn about many different people and events.</p> <p><b>Source:</b> textbooks</p>
<p>I like to read magazines for kids. I really like the stories about famous people who are in movies.</p> <p><b>Source:</b> magazine stories about actors</p>	<p>My mom has recordings of my grandparents telling stories about when they were kids. We love to listen to them before bedtime.</p> <p><b>Source:</b> audio recordings of family talking about their lives</p>
<p>When I visit my aunt, she shows me pictures of my parents when they were little.</p> <p><b>Source:</b> photographs of family members</p>	<p>My friend told me about a book he read that he really liked. He said I should read it too.</p> <p><b>Source:</b> book recommendation</p>
<p>When I was on vacation last year, I found a piece of pottery.</p> <p><b>Source:</b> piece of pottery</p>	<p>I am writing a report on Cleopatra and my friend lent me her encyclopedia.</p> <p><b>Source:</b> encyclopedia</p>



## RASHAD'S DREAM

Read Rashad's story and record one reason why this place was so important.

In school, Rashad is learning about life in ancient Alexandria. He thinks about what life was like back then. He talks about it at dinner and goes to sleep thinking about Alexandria.

Rashad tosses and turns as he sleeps. He begins to dream about life in ancient Alexandria. Rashad finds himself in front of the Great Library of Alexandria. He asks someone walking past, "What is this place?" The person replies, "Come see. This is the greatest place to learn."

Rashad follows him inside. He looks around and sees more than 700,000 scrolls filling the shelves. He sees boys and girls from many different cultures.

Rashad listens as he walks past several groups of people. "A straight line may be drawn from any point to any other," he overhears at one table. "It is the brain, not the heart that controls our bodies," a man says at another table. "The earth is round, round I say," insists another scholar.

Rashad is amazed. He has never before heard so many ideas in one place.



Rashad suddenly wakes up to Yasmeen shaking his arm. "Rashad, what's wrong? You were talking a lot while you were sleeping," she says.

Rashad blinks quickly. "Yasmeen, you should have seen it. It was beautiful. I dreamed I was at the Great Library of Alexandria. There were scrolls everywhere. People from all places were talking about art and science and medicine," he says.

"Hmmm. Sounds nice, but I wonder what was so important about this library that people from all places would go there," says Yasmeen.

**Why was the library such an important place?**



## HOSPITALS THEN AND NOW

Read the text.

### THEN

In Egypt, the first known hospital was built in the southwestern quarter of present-day Cairo in 872 CE. It was one of the first places that did not just comfort the sick but also tried to treat diseases.

One of the largest hospitals ever built was the Mansuri Hospital in Cairo, completed in 1248 CE. The building could hold more than 4,000 patients. There were different areas for different conditions. It had a huge domed lecture hall, a school, and an orphanage. There was also a mosque for Muslim patients and a chapel for Christian patients.

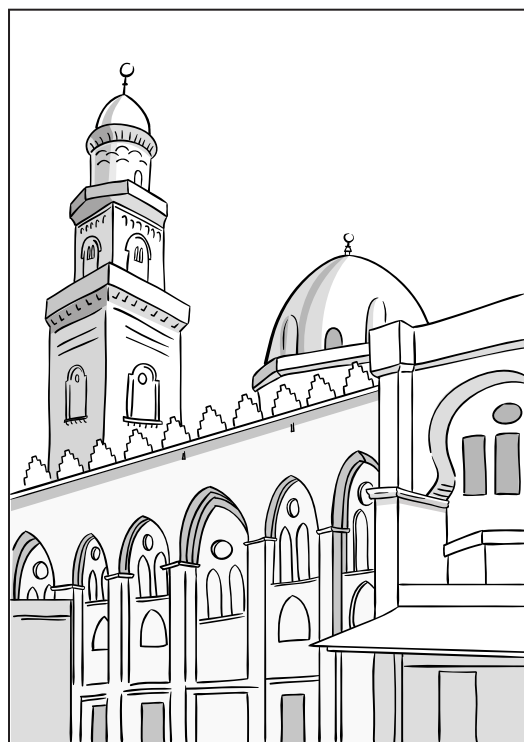
Experienced doctors taught students in a medical school and library that was attached to the building. Each doctor had his own personal book collection, written by hand.

A doctor would visit each patient and record his observations on the patient's card. He based his treatment on his observations. Patient details were discussed at weekly meetings.

Special steps were taken to prevent infection. Patients were given hospital clothing and had beds with clean sheets. Every day, inspectors checked the cleanliness of the hospital and its rooms. It was not unusual for local rulers to make personal visits to make sure patients were getting the best care.

Patients were placed on a fixed diet, depending on their condition and disease. The food was high quality and included chicken, beef, lamb, and fresh fruits and vegetables.

Patients who were cured, but too weak to leave, stayed until they were strong enough to return home.



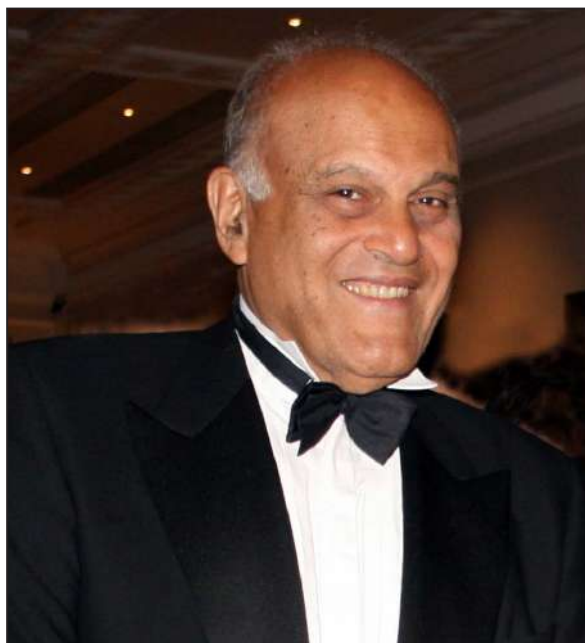
**NOW**

The Magdi Yacoub Global Heart Foundation at the Aswan Heart Center opened in 2009. It is located along the banks of the Nile in Aswan. The hospital has the latest technologies. They provide training for doctors and nurses and free medical services. They conduct advanced research and share what they learn in a quarterly journal. A new Center is also being built in Cairo.

Today, most hospitals serve fewer than 800 people. Many hospitals partner with universities. Doctors share their knowledge and skills with students in real-life situations.

Hospitals today have an organized medical staff, a professional staff, and other health workers, such as technicians and dietitians. The medical staff is organized into departments, such as surgery or pediatrics (children's doctors). Two other essential careers found in hospitals are sanitation and informational technology support.

In addition, a hospital may have a pharmacy, a laboratory, the newest technology, physical therapy departments, a nursery, delivery rooms, operating rooms, recovery rooms, an outpatient department, and an emergency department.





## PATIENT AND DOCTOR

Take notes about the illness or injury your partner describes.





## MEDICAL TOOLS

Look at the tools. Circle past or present and write how you think the tool is used.

### 1. PAST OR PRESENT



I think this is used for \_\_\_\_\_

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### 2. PAST OR PRESENT



I think this is used for \_\_\_\_\_

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### 3. PAST OR PRESENT



I think this is used for \_\_\_\_\_

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### 4. PAST OR PRESENT



I think this is used for \_\_\_\_\_

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5. PAST OR PRESENT



I think this is used for \_\_\_\_\_

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6. PAST OR PRESENT



I think this is used for \_\_\_\_\_

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7. PAST OR PRESENT



I think this is used for \_\_\_\_\_

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---

8. PAST OR PRESENT



I think this is used for \_\_\_\_\_

---



---

9. PAST OR PRESENT



I think this is used for \_\_\_\_\_

---



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### 3-2-1

Complete the organizer to communicate your learning.

3

FACTS I LEARNED

2

FACTS I FOUND  
INTERESTING

1

QUESTION I  
STILL HAVE



## STORY ELEMENTS

As you reread the story, “Rashad is Sick,” complete the organizer.

CHARACTERS	WHAT WE KNOW ABOUT THEM
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

SETTING
<hr/>
<hr/>
<hr/>
<hr/>

PROBLEM	POSSIBLE SOLUTIONS
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>



## STORY PLANNING

Fill in your story ideas.

Characters	Setting
First...	Then...
Next...	Finally...



## PEER FEEDBACK

Record one compliment and one question for each group member.  
Cut out each row to give to the authors.

AUTHOR 1	Compliment: <hr/> <hr/> <hr/>	Question: <hr/> <hr/> <hr/>
AUTHOR 2	Compliment: <hr/> <hr/> <hr/>	Question: <hr/> <hr/> <hr/>
AUTHOR 3	Compliment: <hr/> <hr/> <hr/>	Question: <hr/> <hr/> <hr/>
AUTHOR 4	Compliment: <hr/> <hr/> <hr/>	Question: <hr/> <hr/> <hr/>





## RASHAD IS SICK: CHAPTER 4

On the next four pages, illustrate and write the ending to the Rashad story. Use your story planning to support your writing.

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*(Chapter Title)*

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[illegible]

[illegible]

[illegible]



## MY SELF-ASSESSMENT

Read each statement. For each row, color the stars in the box that describes your effort.

	★	★ ★	★ ★ ★
<b>Academic Content</b>	★ I can use temporal words when writing a detailed narrative with help.	★ ★ I can use temporal words when writing a detailed narrative.	★ ★ ★ I can use temporal words creatively when writing an exceptionally detailed narrative.
<b>Quality of Performance</b>	★ I can use feedback from my peers to improve my writing with help.	★ ★ I can use feedback from my peers to improve my writing.	★ ★ ★ I can use feedback from my peers to improve my writing. I can assist classmates and lead in this area.
<b>Life Skills</b>	★ I have trouble talking with peers about my work.	★ ★ I can talk about my work and the work of my peers.	★ ★ ★ I can talk thoughtfully about my work and the work of my peers. I can assist classmates and lead in this area.

# Rubric Assessment (for teacher use)

	Approaching Expectation (1)	Meeting Expectation (2)	Exceeding Expectation (3)
<b>Academic Content</b>	Uses a graphic organizer to plan a narrative with help from peers or the teacher. <i>Writing D.1.a.</i>	Uses a graphic organizer effectively to plan a narrative. <i>Writing D.1.a.</i>	Uses a graphic organizer effectively to plan a narrative. Assists peers in this work. <i>Writing D.1.a.</i>
	Uses temporal words when detailing the sequence of events in a narrative with help from peers or the teacher. <i>Writing B.1.d.</i>	Uses a few temporal words when detailing the sequence of events in a narrative. <i>Writing B.1.d.</i>	Uses temporal words consistently and accurately when detailing the sequence of events in a narrative. <i>Writing B.1.d.</i>
	Creates questions for peers to aid in improving others' narratives with help from peers or the teacher. <i>Writing D.1.b.</i>	Creates questions for peers to aid in improving others' narratives. <i>Writing D.1.b.</i>	Creates thoughtful questions for peers to aid in improving others' narratives. Assists peers in this work. <i>Writing D.1.b.</i>
	Shares minimal knowledge about medicine and treatment in the narrative. <i>Science A.1.d.</i>	Shares knowledge about medicine and treatment in the narrative. <i>Science A.1.d.</i>	Shares interesting, relevant knowledge about medicine and treatment in the narrative in a creative way. <i>Science A.1.d.</i>
<b>Quality of Performance</b>	Improves writing based on feedback from peers with help from peers or the teacher.	Improves writing based on feedback from peers.	Builds on feedback from peers to further improve writing.
	Listens as peers share their narratives but has difficulty being attentive and/or polite.	Listens attentively and politely as peers share their narratives.	Listens attentively and politely as peers share their narratives. Serves as a role model for peers in this area.
<b>Life Skills</b>	Has difficulty engaging in appropriate discussion with peers while sharing ideas and writing. <i>Communication</i>	Engages in appropriate discussion with peers while sharing ideas and writing. <i>Communication</i>	Engages in thoughtful discussion with peers while sharing ideas and writing. Takes on a leadership role and helps organize the team in this work. <i>Communication</i>
	Incorporates empathy into feedback for peers or the story dialogue with help from peers or the teacher. <i>Empathy</i>	Incorporates empathy into feedback for peers and the story dialogue. <i>Empathy</i>	Incorporates empathy appropriately and effectively into feedback for peers and creatively into the story dialogue. <i>Empathy</i>

# CONNECTING FORCES







## HUNT FOR FORCE AND MOTION

Work with a partner to find examples of force and motion at school.  
Write examples of what you find on the chart.

MOTION		FORCE (CAUSE)

1. Write your own definition of force.

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2. Record the class's definition of force.

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3. Compare the two definitions. Does your definition have all the information needed?  
Add to or revise your own definition if needed.

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## JOURNALING MY OBSERVATIONS

Record observations about how a contact force can start, stop, or change the direction of an object's motion. Draw pictures to help you remember.



My conclusion is \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Now I wonder \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## A TRIP TO A FARM

Skim the story for unknown words. Circle words you do not know.  
Read the story when directed by your teacher.

It is a warm day outside as Rashad and Zeina play catch in front of the house. Birds are chirping. A farmer passes by in his cart led by a gray and brown donkey. Rashad and Zeina notice that the cart is carrying cages of chickens and pigeons for the market.

“The farmer reminds me of what we are learning in class. We get to go visit a farm. I have always wondered what happens on a farm,” said Zeina as she tossed the ball back to Rashad.

Rashad smiled and threw the ball to Zeina. “I know there are different kinds of farms. Some raise livestock, some farmers grow crops, and some do both. I even heard there are new farms where plants are grown in water instead of in the ground. Mr. Mahmoud said we will meet with some of the workers on the farm. They work very hard to plant crops and harvest them. They have to know how to fertilize the soil. They also work to irrigate the land so plants can get water. Other workers care for the animals. They need to know what to feed the animals and how to keep them healthy.”



Zeina tapped her finger to her cheek. “There is so much work to do on a farm. Farmers use a lot of equipment. I know some use scythes for cutting, some use plows drawn by oxen or cows, and others use big tractors.”

“It is going to be fun to visit a farm. But, Zeina. Can you please throw the ball back to me now?” asked Rashad.



## MOTION ON THE FARM

Read the story. Then write the next part of the story. Be sure to include dialogue between Rashad and Zeina.

As soon as he got off the bus, Rashad knew it was going to be a fun day at the farm. The farmer met them at the gate and said they would visit the cotton fields first.

A little black cat rubbed against Zeina's legs, and Rashad told her, "I cannot wait to meet all the other animals on the farm. We have cats at home, but I have never seen anything bigger than a goat up close before." Zeina said she was excited to look inside the grain silos.

The walk to the fields was short, but so much happened on the way. Rashad lost count of the goats he saw in a pen next to a big barn. He was still counting when the farmer said, "Look, children, this is how we sow seeds in our field."

Rashad did not even realize he was in a field. Nothing was growing. How could this be a cotton field? He was about to ask when he saw two giant oxen approaching, pulling something behind them.

"This team of oxen is pulling a spreader. Look closely at the machine they pull. Do you see that lever? It is broadcasting cottonseed."

Rashad watched as seeds flew out in an arch along the rows of dirt. It was like watching a fountain. Sometimes the seeds traveled so far, and other times they fell close to the machine. He wondered why the man driving the oxen kept changing the oxen's speed.

"This is so interesting, Rashad," Zeina said.

"Do you notice that sometimes the seeds go far and sometimes they fall near? What do you think makes that happen?" asked Mr. Mahmoud. Rashad raised his hand.



Think about the motion of the oxen and the seeds. Write the next part of the story below.

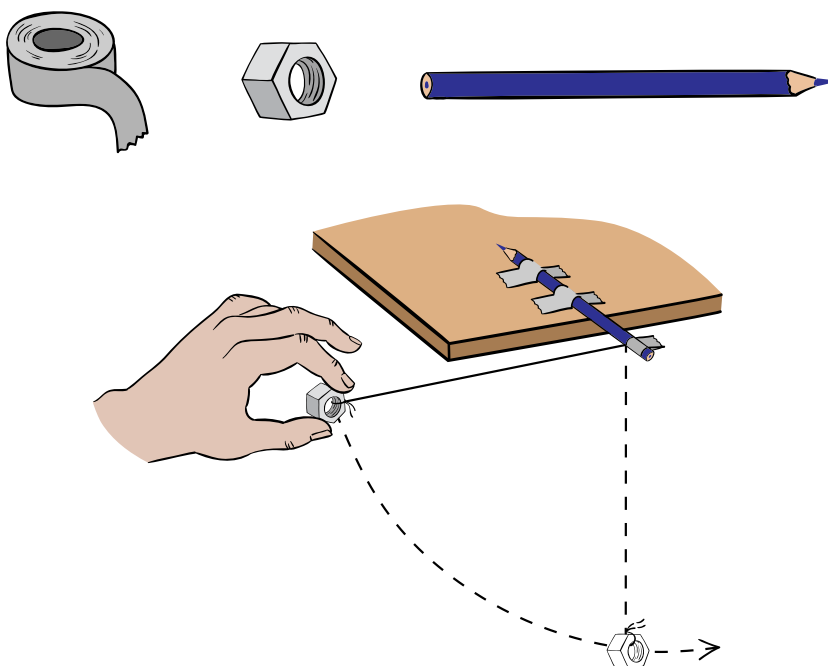


## PENDULUM IN MOTION

Follow the directions to set up your pendulum.

### MATERIALS

- String
- Washer or nut
- Ruler
- Pencil
- Masking tape
- Stopwatch (optional)



### Directions

1. Tape the pencil to the edge of your desk so that half of the pencil hangs over the edge.
2. Tape the end of the string onto the end of the pencil.
3. Pull the washer/nut back so the string is level with your desk.
4. Let go of the washer/nut and count the number of times it comes back to you (consider this one period) within 15 seconds. Use a stopwatch to keep time or listen for your teacher to count down the time.
5. Record your results on the next page on the row for 60 cm, Trial 1. Repeat steps 1 to 4 two more times, recording your results for Trials 2 and 3.
6. Remove the string from the pencil and cut the string in half.
7. Tape the string to the pencil again. Repeat three more trials of the test and record your results.

## PART 1

Count the number of periods (one full swing, out and back) in 15 seconds. Record your results.

LENGTH OF STRING	TRIAL #	NUMBER OF PERIODS
60 cm	1	
60 cm	2	
60 cm	3	
30 cm	1	
30 cm	2	
30 cm	3	



What do you think will happen to the number of periods if you decrease the length of the string to 15 cm? Record your prediction.

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Cut the string in half to 15 cm and test the pendulum again. Record the number of periods.

LENGTH OF STRING	TRIAL #	NUMBER OF PERIODS
15 cm	1	
15 cm	2	
15 cm	3	

1. What patterns do you notice in the data?

---

---

2. How close was your prediction?

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---



## PREDICT THE MOTION

Read the scenarios. Predict the motion of the moving objects or person in each scenario. Match each scenario to one predicted movement.

### SCENARIO

### PREDICTED MOVEMENT

a dancer swaying to the left and trying to regain her balance

will move downward

a toy falling from a baby's hand

will move to the left

a bouncing ball hitting the ground

will move upward

a marble moving in a straight line that is hit by another marble from the right

will stop moving

a rock landing in a pile of sand after falling from a girl's hand

will move to the right



## RASHAD'S DISCOVERY

Read the story.

"We do not always use oxen around the farm for work," the farmer said to the class as he led them up a path. "We have big machines to help us, too."

The farmer walked up to a shiny orange tractor. It was bigger than Rashad ever imagined. It could probably hold ten goats. Rashad could not wait to sit in the cab and steer it.

Rashad noticed that the farmer was carrying a schedule to tell him when to complete his chores. Both Rashad and Zeina wondered how he could read the paper while he worked with both hands. Their question was answered when the farmer stepped up into the tractor's cabin. He pulled something out of his pocket and stuck the list right to the wall of the tractor cabin.

The farmer then reached up and pulled a small screen off the roof of the cabin. Somehow, he stuck the shade to the bar above one of the windows.

"You never know when one of these will come in handy, so I always keep a few with me," the farmer said as he produced another magnet from his pocket. It reminded Rashad of when his mom put his best drawings on the ice box. Rashad laughed, remembering how he could not resist taking down the magnets to play with them.



Rashad's favorite game was to test objects to see what the magnets would attract. Look at the items Rashad tested with his magnets. Circle each item that you think would be attracted by a magnet.





## TESTING THE EFFECT OF MAGNETS

Test a wide variety of objects until you find five that are attracted to a magnet and five that are not. Fill in your results on the table.

OBJECTS NOT ATTRACTED TO MAGNETS	OBJECTS ATTRACTED TO MAGNETS

What do all of the objects that were attracted to magnets have in common?

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Does this match your prediction? \_\_\_\_\_

Class Magnet Rule #1:

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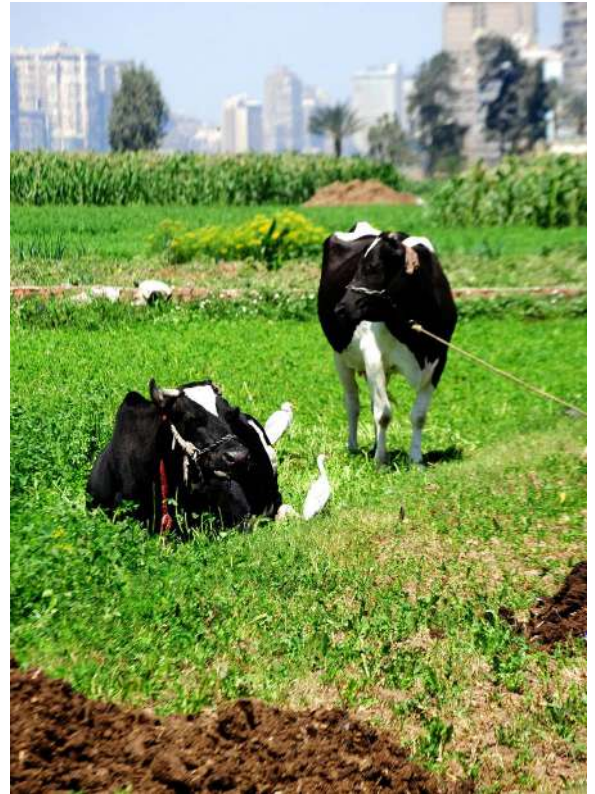
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## COW MAGNETS

Read the informational text. Underline how magnets help to keep cows safe.

You may have used a magnet to pick up paper clips, thumbtacks, or pins. Did you know that some farmers use magnets to help prevent their cows from getting sick? Cows eat grass. However, cows may also swallow nails and other pieces of metal that are in the grass. Over time, this metal can get trapped in the cow's stomach. To help keep the cow healthy, the farmer makes the cow swallow a large, smooth magnet. The cow magnet stays in the cow's stomach. The magnet attracts some of the metal pieces swallowed by the cow. The magnet keeps the metal from getting trapped in the lining of the cow's stomach. One cow magnet can last an entire lifetime. A cow magnet attracts any metal that contains iron. A magnet is a material that attracts iron or something that contains iron. Magnets also attract other metals called nickel and cobalt. Magnets have special properties that make them act the way they do.



**It is your turn. Brainstorm another solution.**

What could be another way you could use magnets to keep the cows safe from metal pieces that may be in the grass they eat?

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## HOW DO MAGNETS DIFFER FROM OTHER MATERIALS?

Read the informational text. Circle any words you do not know.

When you bring a magnet near an object, one of two things can happen. The magnet may cause the object to move or it might not have any effect on the object at all. If the object does move, you would observe the object move toward or away from the magnet. How does a magnet do that?

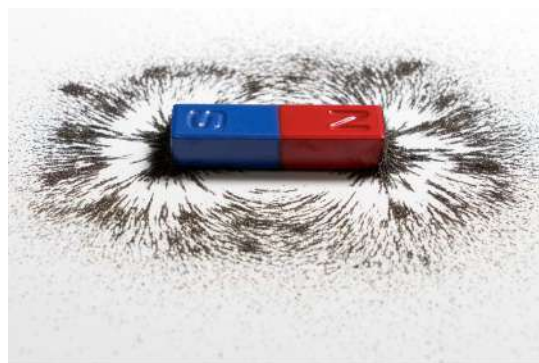
### Poles

Magnets are made of iron and other materials such as cobalt or nickel. All magnets have two poles that are called North and South poles. The poles of a magnet are the parts of a magnet where the magnetic field is strongest. In other words, these are the parts of a magnet where the effect of magnetism is observed to be the strongest. The south pole of a free-hanging magnet will point north. This is how a compass works. A compass needle is magnetized and attracted to Earth's magnetic field. Its poles will align with Earth's north and south poles, as long as there is not a stronger magnet nearby. Knowing which direction is north is important for navigating in unknown places.



### Magnetic Field

Magnets produce a field of force called magnetism. This force allows the magnet to pull certain materials toward itself and pull/push other magnets away. Magnetism affects certain objects that are in its magnetic field. We cannot see the magnetic field. We can observe its effects. The best way to “see” the magnetic field is to place small filings of iron around a magnet. The pattern that the iron filings make near the magnet is the outline of the magnetic field.





## VOCABULARY: POLE

Complete the graphic organizer to help you learn the new word.

<p>Definition</p>	<p>Examples (written or drawn)</p>
<p>Use it in a sentence</p> <hr/> <hr/>	
<p>Notes (clues to remember, synonyms, and so on)</p>	



## WHEN MAGNETS COME TOGETHER

Use two magnets to follow each direction. Draw a diagram and write a sentence to show what happens. Be sure to label the poles of the magnets (North or South).

1. Place the north pole of one magnet near the north pole of another magnet.

DIAGRAM	SENTENCE
	_____
	_____
	_____

2. Place the north pole of one magnet near the south pole of another magnet.

DIAGRAM	SENTENCE
	_____
	_____
	_____

Your teacher is having problems keeping her desk clean. An air vent keeps pushing papers across her desk. The papers will not stay together. You notice four different magnets on your teacher's desk. What solution would you suggest to your teacher to help keep the papers together?

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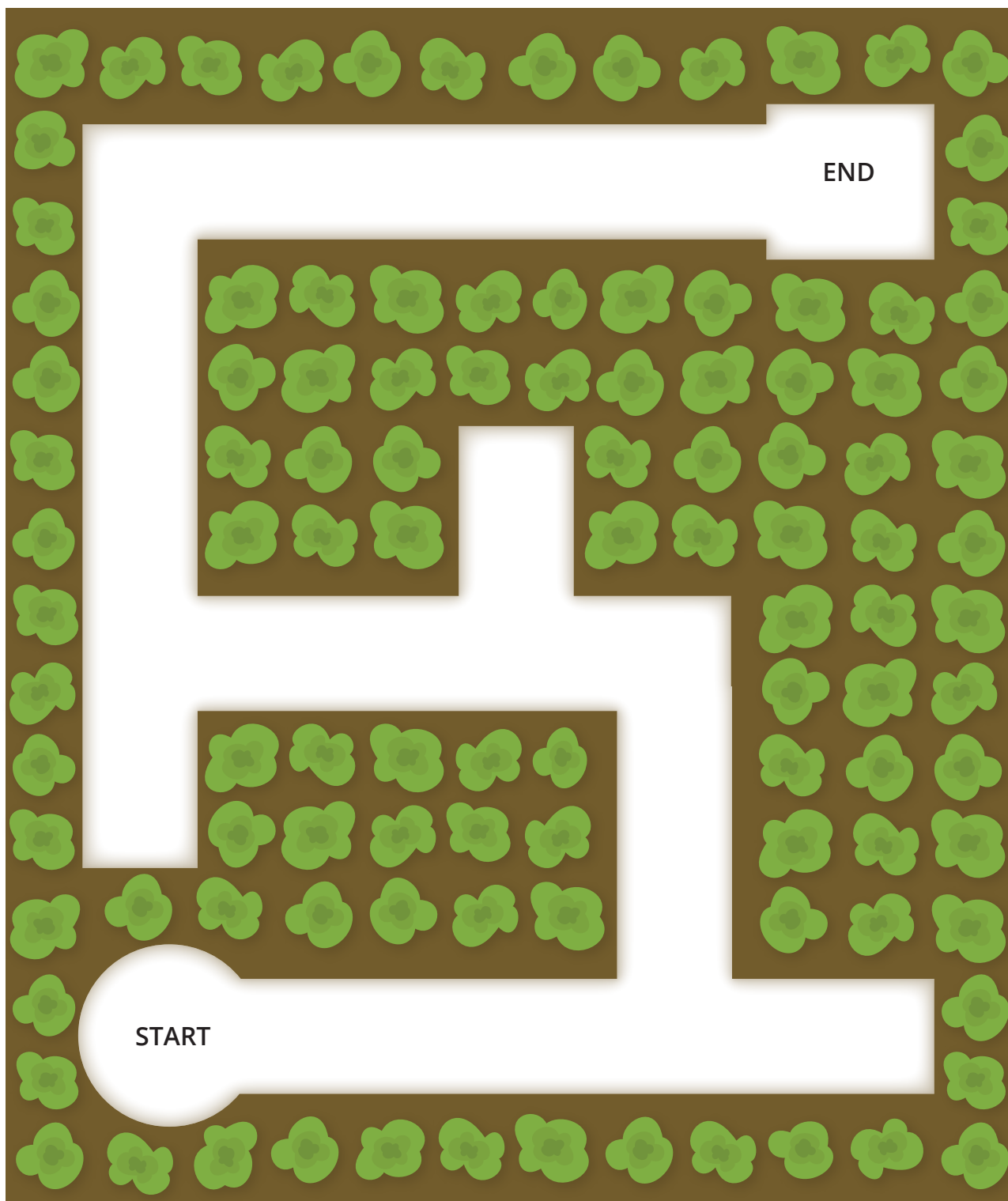


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Class Magnet Rule #2: \_\_\_\_\_

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Place one magnet on the START box. Find a way to get the magnet through the maze to the END box without touching the magnet. You can only use another magnet. If the two magnets touch, you must start over.





## FORCES FROM A DISTANCE

Find at least two ways to make a paper clip move with the magnet. Do this without the paper clip coming in direct contact with the magnet. (In other words, do not hit the paper clip with the magnet.) Record your ways with diagrams.

One way to move the paper clip without the magnet touching it:

Another way to move the paper clip without the magnet touching it:

1. What is causing the paper clip to move?

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2. What happens when the magnet and paper clip are too far apart? Why does this happen?

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## CAN MAGNETS ATTRACT THROUGH OTHER MATERIALS?

Test how many pieces of paper can be placed between a magnet and a paper clip and still have the magnet attract the paper clip. Record your results. Answer the questions.

### MY OBSERVATIONS AND RESULTS

1. How many pieces of paper were you able to place between the magnet and the paper clip? \_\_\_\_\_

2. Why does the magnet attract the paper clip even though it is not in direct contact with the paper clip?

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3. What happened when you used more sheets of paper between the magnet and paper clip? Why do you think this happened?

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## WHERE IS THE MAGNETIC FIELD?

Follow the directions to draw the magnetic field lines around your magnet.

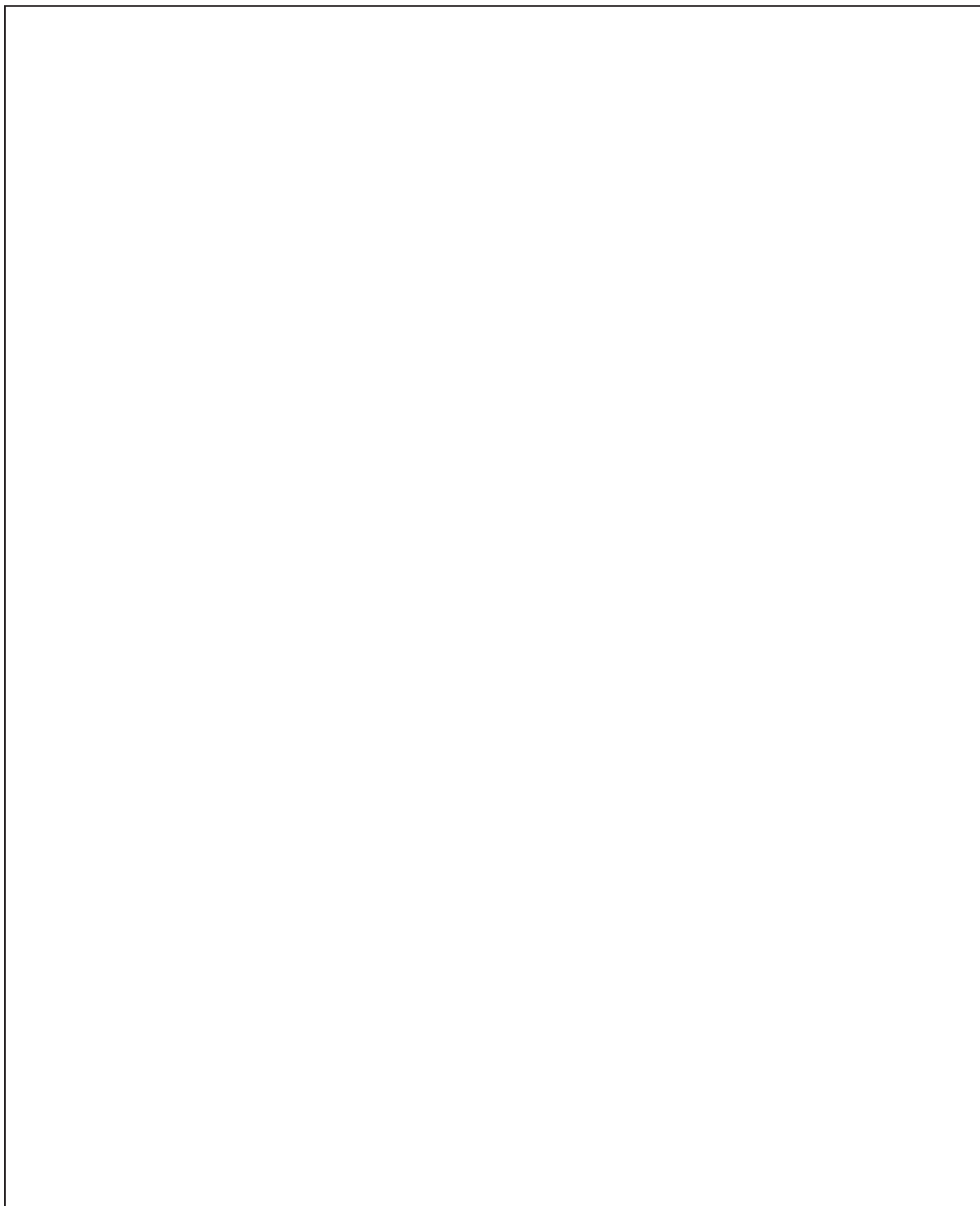
MATERIALS
<ul style="list-style-type: none"><li>• Bar magnet</li><li>• Pencil</li><li>• Compass</li></ul>



### Directions:

1. Place the bar magnet in the middle of the paper. Trace the outline of the magnet.
2. Place the compass at one pole of the magnet and make a dot next to it showing the direction the compass arrow points.
3. Move the compass so that the base of the arrow is at the dot you have just made. Now make a new mark where the tip of the arrow is pointing this time.
4. Keep doing this until you reach the end of the paper.
5. Connect the dots. You have now drawn one magnetic field line.
6. Go back and begin again, starting at a different spot around the magnet than you did the first time. Repeat the above steps.
7. Repeat the process until you have drawn as many lines as you can for both ends of the magnet.

Use this page to draw the magnetic field around your magnet.





## MAGNETISM IN USE

Read the informational text with a partner. Then discuss and answer the questions.

We use magnets for practical things every day. We can stick a note to the refrigerator or ice box with a magnet. There are toys that use magnets to make blocks or train cars stick together. Some dartboards use magnets to make the darts stick to the board.

Magnets are sometimes used to keep wallets, cabinets, or boxes closed. Powerful magnets can help separate some metals that can be recycled from other garbage.



How do you see magnets used around you every day?

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What problems do you think a magnet could help solve?

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## THE FARMER NEEDS HELP

Read the story. Underline the problem the farmer needs to solve.

“You might think that farms are old fashioned,” the farmer said, “but our farm is always trying to get better. We have been researching some options to give our cattle a better life. The oxen work so hard for us in the fields, and our cows provide us with milk. We think they would be happier if they could graze on the big open fields instead of being tied up all the time. It is important we do not lose them, though.”

Rashad and Zeina talked about this. Rashad thought about how he used to have trouble sitting still in class. Zeina noted that she usually worked better in class after some time to play in the courtyard. They agreed that if the cattle could be free on the pasture, they would be stronger and able to work harder for the farmer.

“We bought some fences,” the farmer explained. “That way the cattle can have this huge pasture to graze freely whenever they want. It will keep them healthier and give them a chance to exercise.”

Zeina looked at the giant pasture created by the new fences, and then she looked back at the barn. It was so beautiful, but suddenly she noticed something. “How do you keep them in the barn at night, so they stay safe? They could walk out in the dark and get hurt.”

“That is a great question,” the farmer replied. “We have been struggling with keeping the gate closed. It opens like a regular door, but cattle are smart. They have started pushing it open to get into the fields all night long.”

Rashad’s mind worked hard to solve the problem. It seemed like everyone would be happier if those gates would keep the cattle inside during the night.





# DOES IT HAVE PARTS?

Look at the picture of a toy tractor. What parts of the toy do you see?  
Name or describe as many as you can.



PART	WHAT IT DOES	QUESTION I HAVE



## REVERSE ENGINEERING

Follow the steps the class has written to take apart your object. Record the steps you take and what you find. Show the parts of your object by making labels or by using colors.



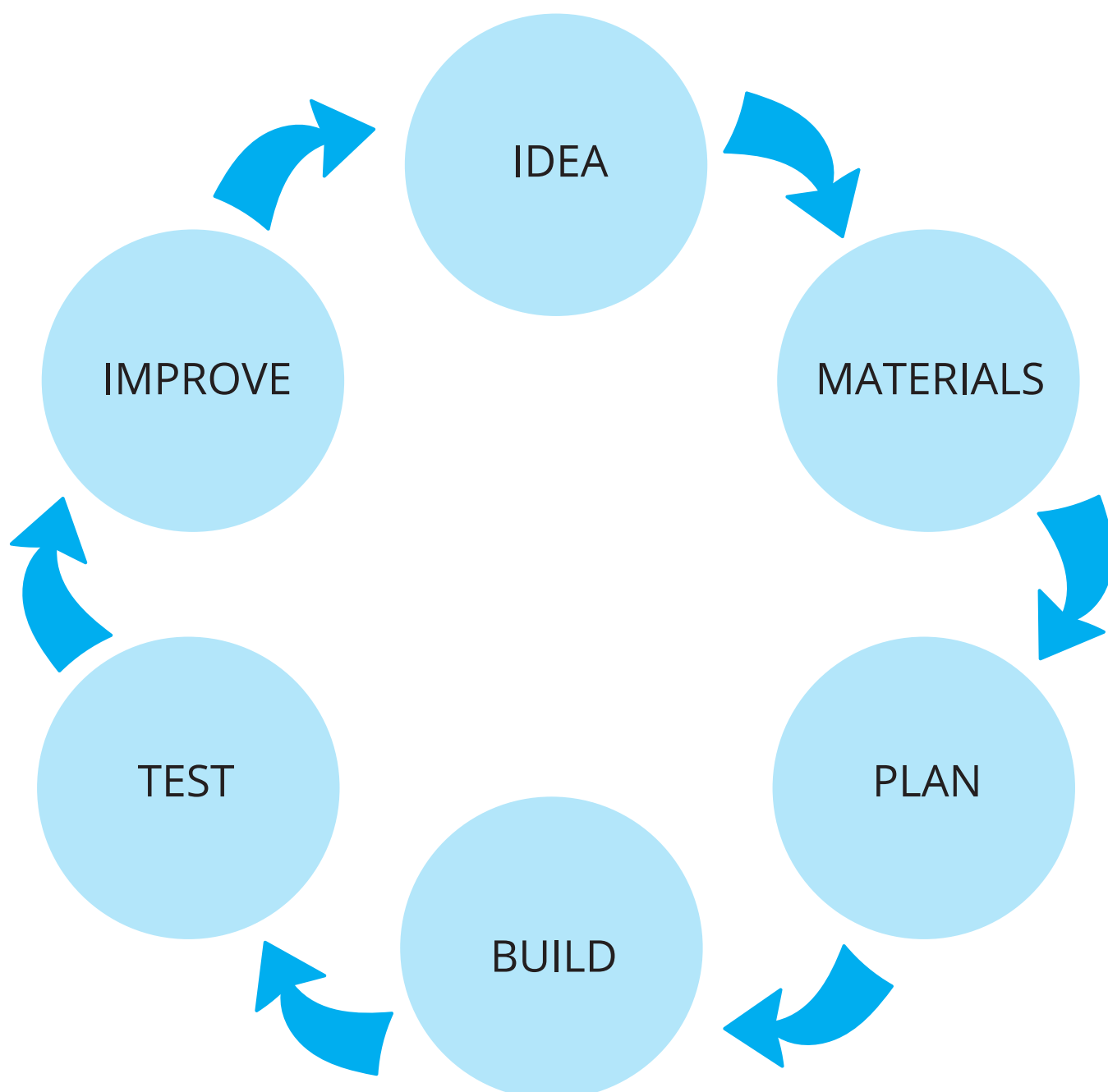
## REBUILDING IN NEW WAYS

Take turns with your group to put the object back together in a new way. After each person adds a piece, record what you did using words and drawings. Make sure you draw your pictures in the order of the steps you take.



## ENGINEERING DESIGN PROCESS

Review the engineering design process. Discuss it with your team members, so everyone agrees about each step.





## MY IDEAS

How can you help the farmer keep the cattle in the barn? Write three ideas to share with your team.

1. Write or draw a diagram of three ideas you want to share with your team.

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2. Draw a diagram of the idea that was chosen. How is the idea similar or different from your own?

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[illegible]



## TESTING OUR DESIGN

Work with another group to give feedback about each other's designs. Listen to the ideas presented by the other team about your design. On one side, take notes and observe what works well about your design. On the other side, write what needs to be improved.

NOTES	IMPROVEMENT

Draw your idea in the box below.



## COST SHEET

In the first column, list the materials you used to build your model. In the second column, write how many of each item were used. In the next column, write the cost for each item. For the last column, choose a multiplication strategy to decide how much you are spending on each item. Total the column to determine how much money your gate improvement will cost.

ITEM	NUMBER OF ITEMS	COST FOR EACH ITEM	TOTAL COST
Example: Large magnet	2	5	10

Total Cost: \_\_\_\_\_



## MY SELF-ASSESSMENT

Read each statement. For each row, color the stars in the box that describes your effort.

	★	★ ★	★ ★ ★
<b>Academic Content</b>	★ I can use my knowledge about force, motion, and magnets to create a solution for a farmer with help.	★ ★ I can use my knowledge about force, motion, and magnets to create an effective solution for a farmer.	★ ★ ★ I can use my knowledge about force, motion, and magnets to create an effective and unique solution for a farmer.
<b>Quality of Performance</b>	★ I can write notes and create diagrams, but they do not clearly explain my ideas.	★ ★ I can write notes and create diagrams to clearly explain my ideas.	★ ★ ★ I can write notes and create diagrams to clearly explain my ideas in great detail.
<b>Life Skills</b>	★ I can use a chart to detail project tasks, record who is responsible, and check them off when completed with help.	★ ★ I can use a chart independently to detail project tasks, record who is responsible, and check them off when completed.	★ ★ ★ I can use a chart to detail project tasks, record who is responsible, and check them off when completed. I can assist classmates and lead in this area.

# Rubric Assessment (for teacher use)

	Approaching Expectation (1)	Meeting Expectation (2)	Exceeding Expectation (3)
Academic Content	<p>Designs a model of a gate closure with a group, with little individual contribution to the design and function of the product. <i>Vocational Fields A.4.b.</i></p>	<p>Designs a model of an effective gate closure with a group and contributes basic ideas to the design. <i>Vocational Fields A.4.b.</i></p>	<p>Designs a model of an effective gate closure with a group and contributes essential, creative ideas to the design. <i>Vocational Fields A.4.b.</i></p>
	<p>Makes observations about how smaller parts make up an object with support from peers or the teacher but does not apply this concept to the gate closure product. <i>Science D.1.c.</i></p>	<p>Makes observations about how smaller parts make up an object and attempts to apply this concept to the gate closure product. <i>Science D.1.c.</i></p>	<p>Makes insightful observations about how smaller parts make up an object and effectively applies this concept to the gate closure product. <i>Science D.1.c.</i></p>
	<p>Follows the engineering design process and describes how it was used to develop a product with support from peers or the teacher. <i>Science F.1.e.</i></p>	<p>Follows the engineering design process and describes independently how it was used to develop a product. <i>Science F.1.e.</i></p>	<p>Leads the group in following the engineering design process, describes how it was used to develop a product in thoughtful detail. <i>Science F.1.e.</i></p>
	<p>Determines the total cost of the materials included in the model incorrectly or only with support from peers or the teacher. <i>Math B.1.d.</i></p>	<p>Determines the total cost of the materials included in the model with accuracy. <i>Math B.1.d.</i></p>	<p>Determines the total cost of the materials included in the model with accuracy. Assists peers in completing this work and applying the strategies learned in math. <i>Math B.1.d.</i></p>
Quality of Performance	<p>Offers minimal feedback on the effectiveness of a peer's gate closure design. <i>Science A.1.f.</i></p>	<p>Offers feedback on the effectiveness of a peer's closure gate design, including general ideas for improvement. <i>Science A.1.f.</i></p>	<p>Offers especially thoughtful feedback on the effectiveness of a peer's closure design, including unique and detailed ideas for improvement. <i>Science A.1.f.</i></p>
	<p>Takes notes to explain a design and may include diagrams, but the work lacks clarity. <i>Science A.1.g.</i></p>	<p>Takes notes that include diagrams to explain a design with clarity. <i>Science A.1.g.</i></p>	<p>Takes notes that include diagrams to explain a design with exceptional clarity and detail. <i>Science A.1.g.</i></p>
Life Skills	<p>Explains thought processes with little clarity and may have difficulty expressing ideas to peers. <i>Critical Thinking Speaking and Listening A.2.a.</i></p>	<p>Explains thought processes with clarity when sharing ideas with peers and the teacher. <i>Critical Thinking Speaking and Listening A.2.a.</i></p>	<p>Explains thought processes with exceptional clarity when sharing ideas with peers and the teacher. Effectively answers questions to further clarify or provide more detail when asked. <i>Critical Thinking Speaking and Listening A.2.a.</i></p>
	<p>Uses a task list with the support of peers or the teacher. <i>Productivity Vocational Fields A.1.b.</i></p>	<p>Uses a task list and adjusts it as needed to manage the completion of a model. <i>Productivity Vocational Fields A.1.b.</i></p>	<p>Uses a task list and adjusts it as needed to effectively manage the completion of a model. Takes on a leadership role and helps organize the group in this work. <i>Productivity Vocational Fields A.1.b.</i></p>



# CONNECTING PEOPLE







## MY COMMUNITY

Draw a picture of a community where you enjoy making connections. Then have four classmates add to the picture. Describe what it means for people to connect in the community.

### MY COMMUNITY

How people connect in the community:

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## CONNECTING PEOPLE WEB

In each circle, write the name of someone you connect with in the community. On each line, write how and why you connect with that person.

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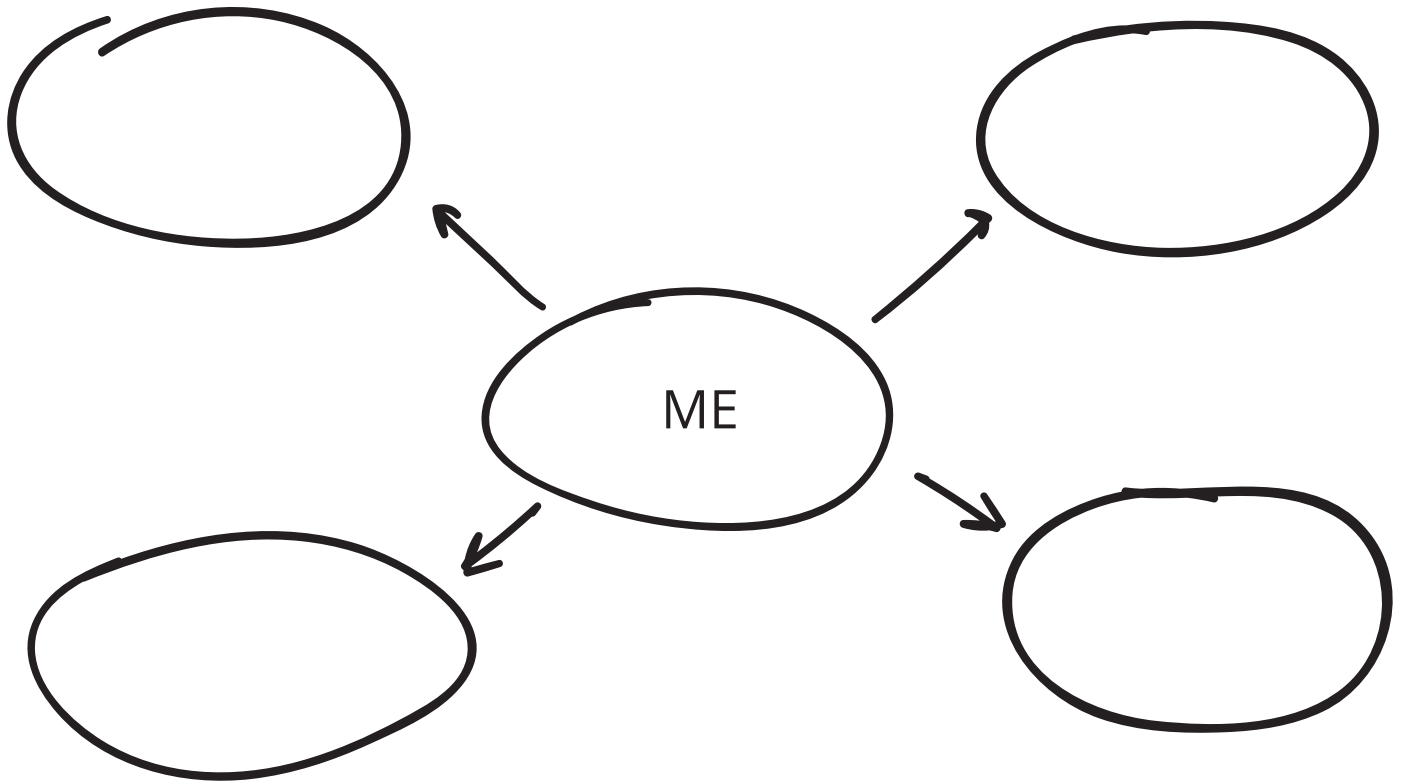
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# CONNECTION CHALLENGES

List several people you do not connect with often. Record a reason that makes connecting with them a challenge. Then circle the challenge you are most interested in solving.

PERSON	CONNECTION CHALLENGE

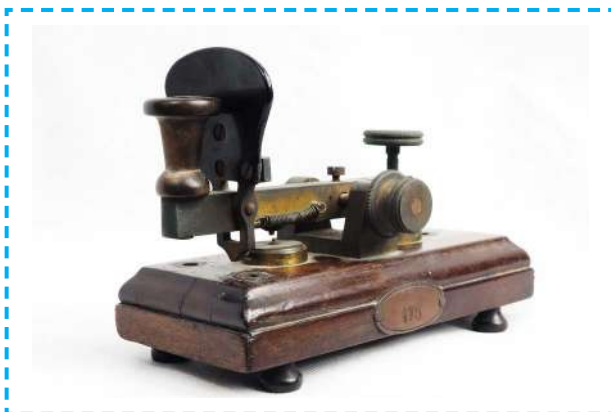




## TECHNOLOGY THROUGH TIME

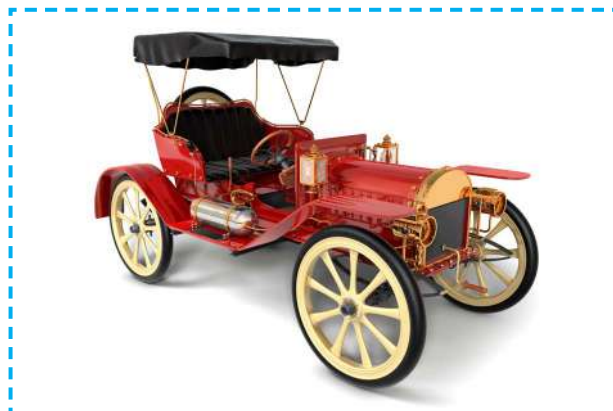
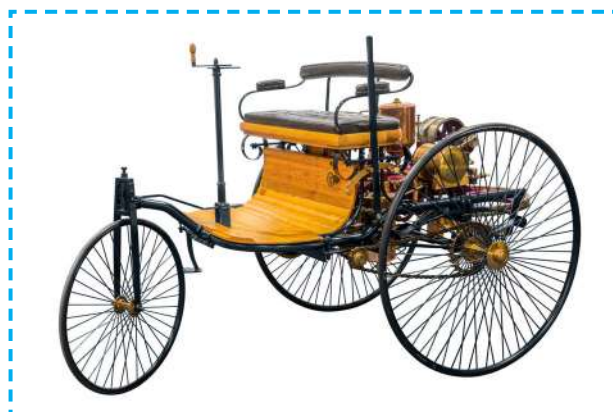
Cut out each card. Arrange each set of cards in the order in which the technology was invented.

Set 1





Set 2







## PROBLEMS AND SOLUTIONS

Choose one example of technology from each card set. Consider what problem it addresses and how it solves that problem. Record notes on the chart below. In the last box, add your own example of a technology that helps people connect.

PROBLEM	SOLUTION
<div>Communication</div>	<div>Communication</div>
<div>Transportation</div>	<div>Transportation</div>



# ADVANTAGES AND DISADVANTAGES

Look at each car. Write one advantage and one disadvantage of each car’s design.

	ADVANTAGE	DISADVANTAGE
		
		
		
		



## VOCABULARY: TECHNOLOGY

Complete the graphic organizer to help you learn the new word.

Definition	Examples (written or drawn)
Use it in a sentence	
<hr/> <hr/>	
Notes (clues to remember, synonyms, and so on)	



## WHY PEOPLE NEED TRANSPORTATION

Read the article on transportation with a partner. Underline reasons why people need transportation as you read.

Have you ever taken a trip? A trip might require taking a bus across town or an airplane halfway around the world. Where did you go? What form of transportation did you use?

Going on a trip is one reason people use transportation. There are many other reasons people may need to use transportation. Young people need to be educated at schools. Adults need to earn money at their jobs. Some schools and jobs are too far away to walk. Everyone may want to visit friends and family and to go on vacation.



Transportation does more than move people around. Transportation also moves goods. People need a wide variety of goods like food, furniture, and clothing. Transportation makes it easier to get resources found in different areas. Transportation brings goods from where they are made to where they are sold. Transportation also helps connect people so they can trade for the things they need. All communities depend on good transportation.

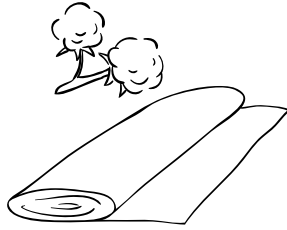


## WHAT PEOPLE TRADE

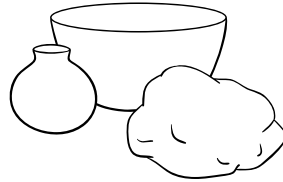
Cut out the cards. Listen to your teacher for directions.



RICE



COTTON



CLAY



OLIVE OIL



APRICOTS



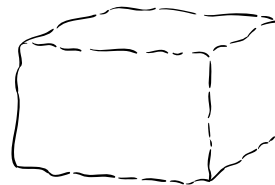
ALMONDS



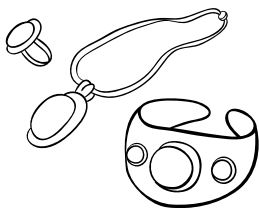
DATES



SALT



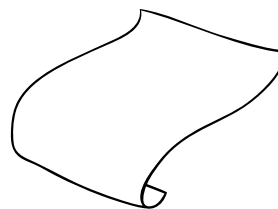
STONE



JEWELS



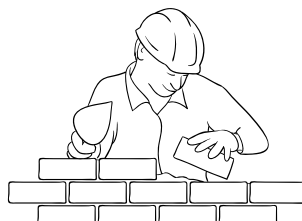
FISH



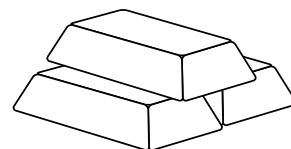
PAPYRUS



SEAMSTRESS (LABOR)



BRICKLAYER (LABOR)



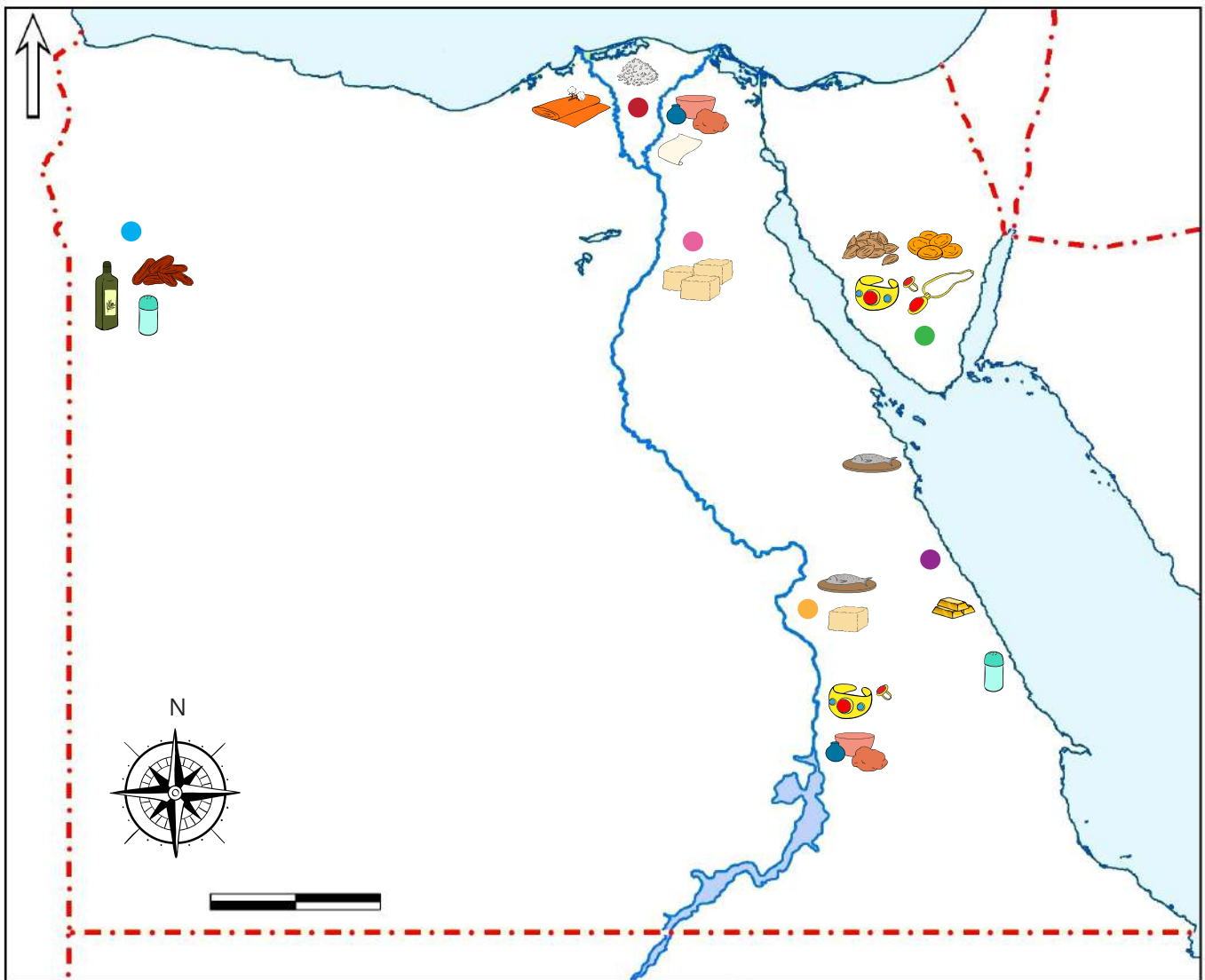
GOLD





## TRADING MAP

Look at the map of Egypt. Listen for your teacher to tell you from which region you will be trading. Circle your region.





## GETTING TO ZEINA'S HOUSE

Read the story. What type of transportation should Rashad use to get to Zeina's house?

Rashad came home from school and told Mother he wanted to play at his cousin Zeina's house. "Mother, can you please take me to Zeina's house? We made plans to play football in her backyard," he said.

"I am sorry, Rashad, but I cannot take you today. I do not mind if you go see her, but our car is not working," Mother said.

Rashad was disappointed. Then he started thinking about his problem. How could he get to Zeina's house? She lived nearly 10 kilometers away, so he knew it was too far to walk.

"You should take an airplane," said Yasmeen. "You would be there in no time. Or maybe you could take a hot air balloon!"

Rashad giggled at his little sister. "I cannot take an airplane, Yasmeen. Airplanes are used when people need to travel far away. They also cost a lot of money to use. And hot air balloons are not good for traveling."



"You love to run, Rashad. Why don't you just sprint over there as fast as you can?" she said, looking proudly at her big brother.

"I could do that," Rashad said, nodding his head, "but it would take me nearly an hour to run that far, and I would have to run home again. We would barely have any time to play together."

Rashad was frustrated. He went outside to think about how he could get to Zeina's house. Just outside the door, he spotted the bicycle Yasmeen had recently received for her birthday. He rushed back inside to ask Yasmeen for permission to borrow it.

"What are you willing to trade me?" Yasmeen asked with a smile.



## MEETING PEOPLE'S NEEDS

Read the passage. Circle the types of transportation you have used to connect with other people.

Each form of transportation provides a unique set of advantages and disadvantages, making it ideal for different circumstances.

Bicycles are very useful for short journeys in good weather.



Automobiles can carry people quickly and efficiently within their communities and regions, while trucks and trains can carry heavy cargo.



Ships are ideal for carrying cargo over the ocean.



Airplanes are useful for traveling very long distances or over oceans quickly.

People work together and use many types of transportation to support a community.



## DESIGNING TRANSPORTATION SYSTEMS

Read the article. Underline the factors engineers must consider when they design transportation systems.

Engineers are trained to solve design challenges. One important design challenge is improving transportation systems. Engineers must design a solution that meets the needs of the community. The solution also needs to respect the environment. Engineers use a process when they do their work, which starts with identifying a need and writing a goal.

When designing a transportation system, engineers must think about several factors. One factor is location. Where is the transportation system going to go? What are the advantages and disadvantages of that location? How far do the people using the system need to go? Will the system be used on land, in the water, or in the air?



Another factor an engineer must consider is who will use the system. Will the system need to transport people, cargo, or both? How many people will use the system, and how often? If a bridge is needed, the amount of traffic across the bridge is important to know. How wide or strong must the bridge be to fit everyone? What features might be needed to control the direction and speed of traffic?



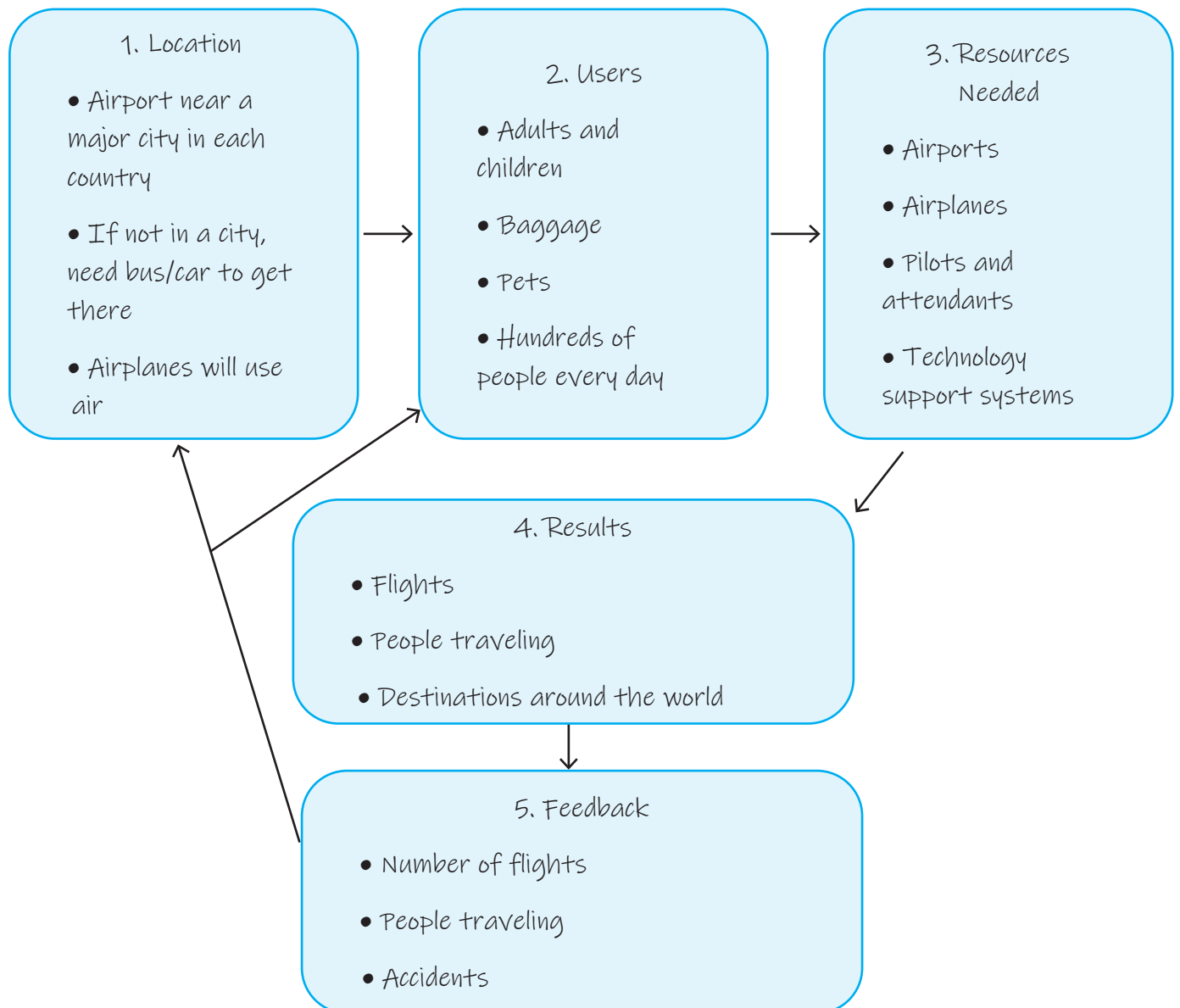
## TRANSPORTATION SYSTEM DIAGRAM

Look at the sample diagram. Fill in the blank diagram with another type of transportation system that is used on land or in the water.

Need:

Around a million Egyptians currently live in North America. Another million live in Europe, and a few hundred thousand live in Australia. Design a transportation system that safely connects Egyptians to their family members and friends abroad.

Type of transportation system: Airplanes



Need:

Type of transportation system: \_\_\_\_\_

1. Location

2. Users

3. Resources  
Needed

4. Results

5. Feedback



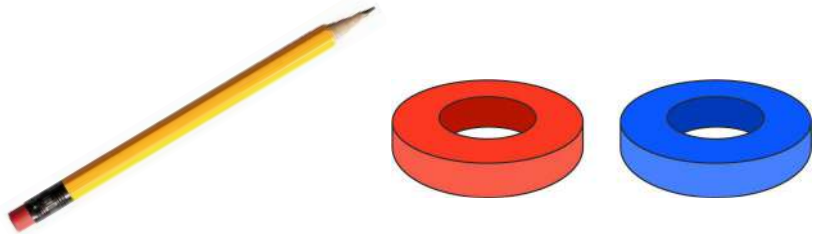


## FLOATING MAGNETS

Read the instructions. Follow the steps to complete the activity. Record your observations with a drawing and words.

### MATERIALS

- Pencil
- Two circular magnets



### Instructions:

1. Hold the pencil upright on your desk. Slide one magnet down the length of the pencil so it rests on the desk.
2. Slide a second magnet onto the pencil so that it does not touch the first magnet. Remember what you learned about the poles of a magnet to help you.

### My Observations:

My Drawing

When I placed the second magnet on the pencil...

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## TRANSPORTATION INNOVATIONS

Read the article with your teacher. First, find the innovations that use magnets in the design. Then, read the article again and circle the advantages and underline the disadvantages of each innovation.

Long ago, people relied on animals to cross large distances on land. The horse and carriage allowed people to travel far with goods. Travel by carriage was very slow. Trains were invented to help people travel long distances more quickly. Trains were also inexpensive. Many people could afford to use them. Trains are still used today, but people want to travel across land even faster. Engineers are now designing new ways to travel across land.

### Maglev Train

Magnetic levitation (maglev) trains work by using powerful magnets. The magnetic force makes the train “float” above tracks. A maglev train ride is smooth and quiet. It can also move very fast—more than 480 kilometers per hour. The main disadvantage of the maglev train is that it is expensive to build and operate.



### Hyperloop

The hyperloop system will send people and goods through large tubes very fast. The speed is estimated at almost 1,200 kilometers per hour. A trip that takes six hours now could happen in just 30 minutes. The way it works is similar to the maglev train. Magnets on the track and in the sled’s engine push the pods along the track. The hyperloop does not need much energy to run, and it does not make pollution. Not everyone is convinced the hyperloop is a good idea. Some say it is too expensive and the engineering challenges are too difficult.



## BUILDING A NEW CAPITAL

Read the article. Answer the question.



Egypt is designing a new capital city. This capital will be a “smart” city. It will use technology to provide services. Sensors will report smoke or fires directly to emergency services. The smart technology will also monitor accidents and the amount of traffic. The airport will have high-tech security systems and baggage scanners. The new capital will be the first city in the country to not use cash. People will use credit cards or phones to pay for goods and services.

Use your imagination. What is one new technology or innovation you would like to see in the new capital?

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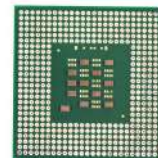
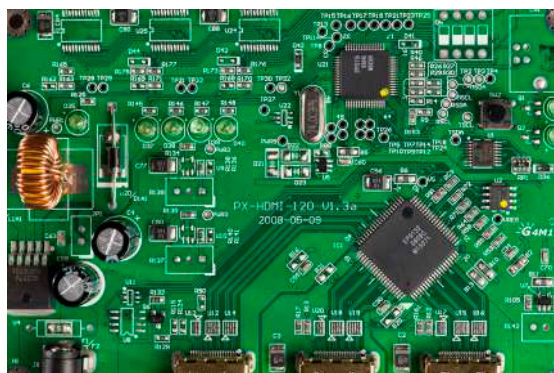
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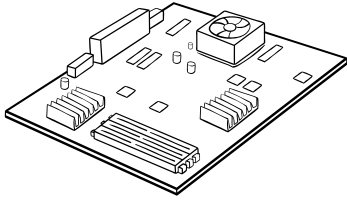


## THE PARTS OF A COMPUTER

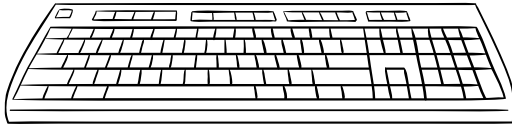
Look at the pictures on the page. What do you know about each of these parts of a computer?

A computer system is a set of hardware (equipment) and software (programs) that work together to complete a task or function. They input, output, process, and store data and information. The basic parts of a computer are:

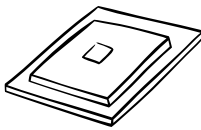




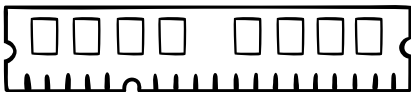
- The **motherboard** is where all the parts of a computer connect and communicate.



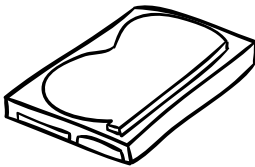
- The **input** device is used to put data into the computer. The example shown here is a keyboard.



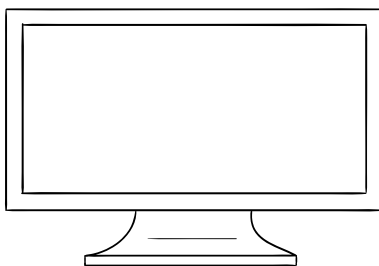
- The **central processing unit (CPU)** is the brain of the computer. It follows commands and manages information. The CPU sends data to the output devices.



- The **memory** (RAM) stores data short term so the CPU can use it.



- The **storage** device stores data, like computer programs, long term.



- The **output** device allows the user to see the result. The example shown here is a monitor.



## MY TURN

Read the story to yourself. Then read the story again with your partner.  
Use expression as you read.

Mother is waiting at the door. She has keys in her hand. Her foot is tapping and she is not very happy.

“Rashad, please stop talking on your cell phone. We have 15 minutes to get to school. We will be late again. And Yasmeen, your report should have been finished yesterday. You have been on the computer since you got home yesterday. You are not the only one in the house who needs the computer. Please come now.” Mother shook her head and walked to the car.

Yasmeen turns to her brother, Rashad. “You are always on your cell phone, Rashad. You should be more considerate of Mother.”

Rashad throws his jacket at Yasmeen. “I would not be on my cell phone if you were not on the computer all the time. You never let anyone else use the computer,” he says.



## STAYING CONNECTED

We communicate in many ways. Sometimes we talk or text with others and sometimes we learn or play games. Work with your Shoulder Partner to list ways you use technology to communicate. Then think about other ways we might communicate.

TECHNOLOGY	ADVANTAGES	DISADVANTAGES	WAYS TO CONTROL USE
Video games	They are fun to play I can learn from some	I spend too much time I do not play with friends	Only play for a certain amount of time Play at a certain time of the day



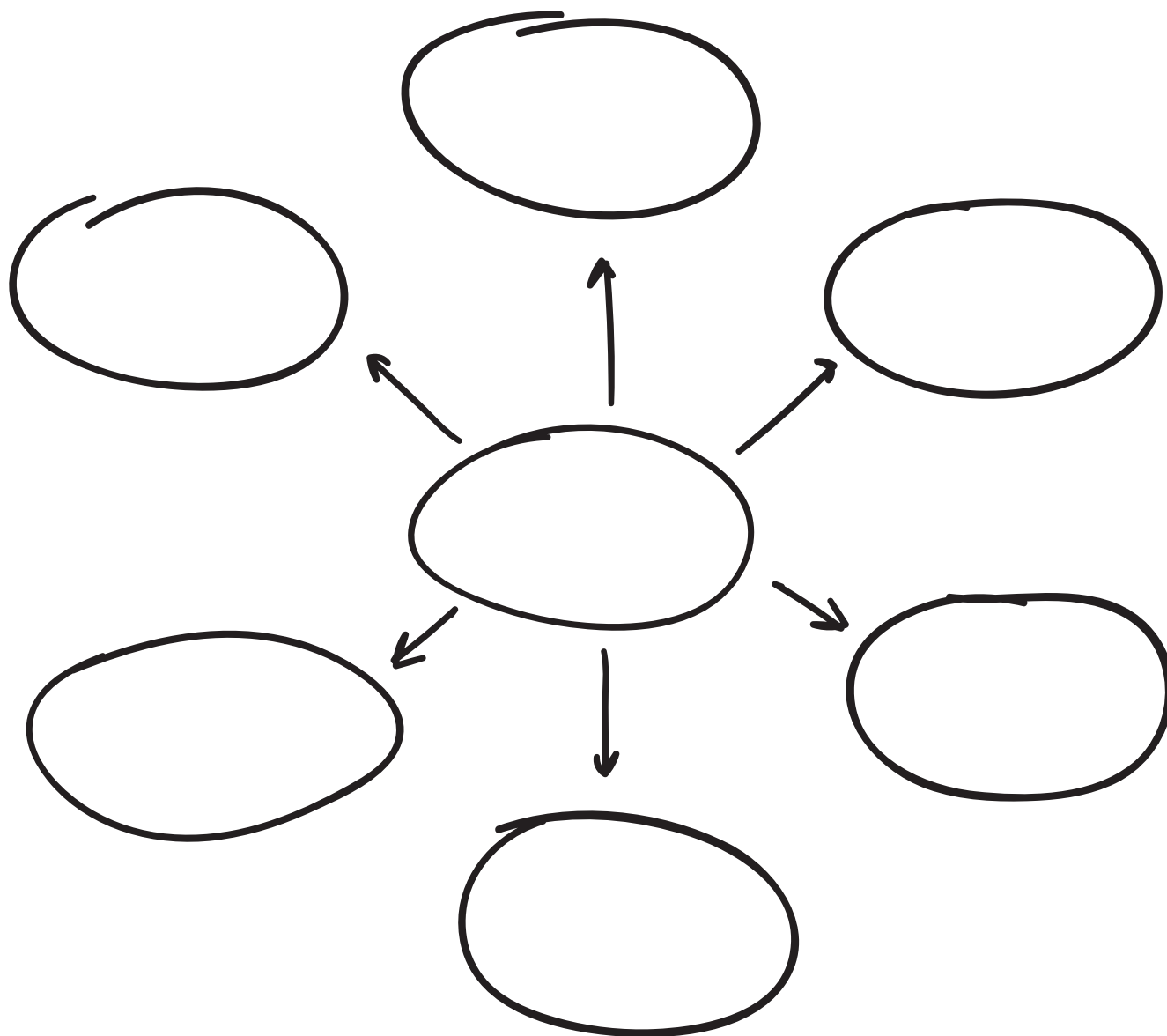
## THE YEAR 2040

Use your imagination. Think about how technology might change in the future. Draw a picture of how you stay connected with your family in the year 2040. Be sure to add details.



## IDEAS FOR THE FUTURE

Decide on a problem in the future that you would like to solve. Write the problem in the center of the circle.





## OUR PLAN

Work together as a team to decide on a solution to your problem. Answer the questions. Draw a detailed diagram of your model. Use color to show how it might look as a finished product.

1. What problem or need are you trying to solve?

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2. What is the solution for your problem?

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3. How will your solution help connect people?

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## GETTING FEEDBACK

Work with another group to give and receive feedback on each other's designs. Listen to the ideas presented by the other team about your design. On one side, take notes and observe what works well about your design. On the other side, write what needs to be improved.

NOTES	IMPROVEMENT

What changes will you make and why?

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## OUR REDESIGN

Draw your final design. Label the working parts. Give your design a name.

Name of our design: \_\_\_\_\_



## IN THE YEAR 2040

Think about the story you will write. Draw an illustration that shows Rashad and Yasmeen using your design. Be sure to include details and color to show what you think 2040 will look like.



## MY ROUGH DRAFT

Look back at the illustration you drew for the story. Plan what you will write. Draft your story. Ask a friend to help you revise the story. Publish your final version.

Plan:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

Draft:

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[illegible]



## MY SELF-ASSESSMENT

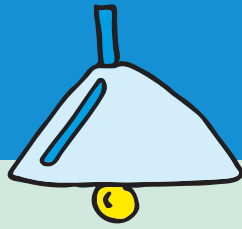
Read each statement. For each row, color the stars in the box that describes your effort.

	★	★ ★	★ ★ ★
<b>Academic Content</b>	★ I can write a story that has descriptive details and a clear sequence of events with help.	★ ★ I can write a story that has descriptive details and a clear sequence of events.	★ ★ ★ I can write a creative story that has exceptionally descriptive details and a thoughtful sequence of events.
<b>Quality of Performance</b>	★ I can solve a future problem with my team. I can include details that help others understand my solution with help.	★ ★ I can creatively solve a future problem with my team. I can include details that help others understand my solution.	★ ★ ★ I can lead while creatively solving a future problem with my team. I can include thoughtful details that help others understand my solution.
<b>Life Skills</b>	★ I can make improvements to my work with help.	★ ★ I can make improvements to my work based on positive feedback and suggestions from peers.	★ ★ ★ I can make thoughtful improvements to my work based on positive feedback and suggestions from peers. I serve as a role model in this area.

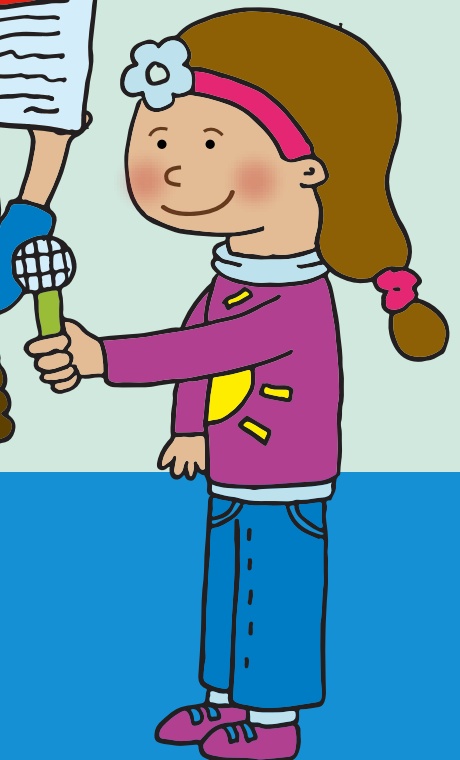
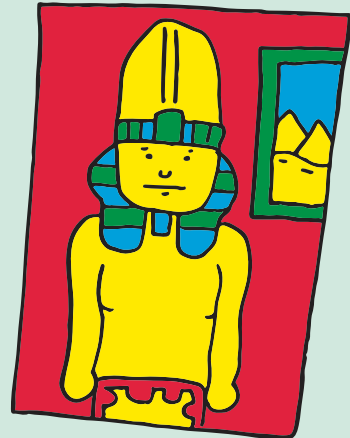
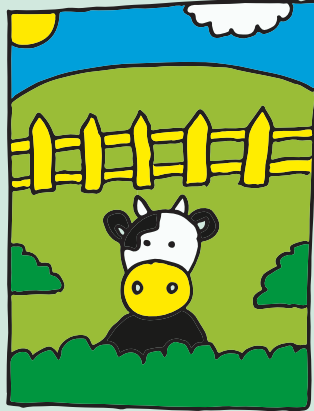
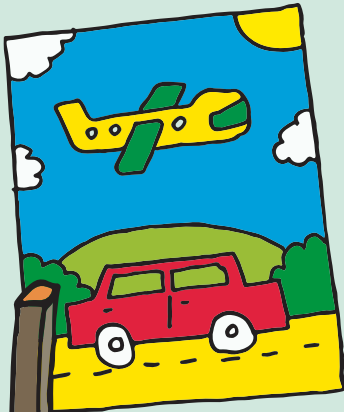
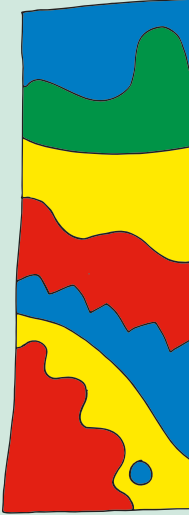
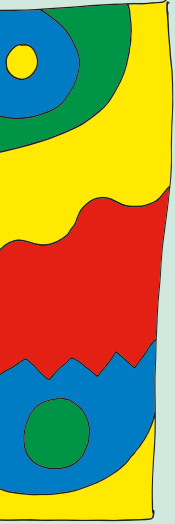
# Rubric Assessment (for teacher use)

	Approaching Expectation (1)	Meeting Expectation (2)	Exceeding Expectation (3)
Academic Content	Imagines a technological solution that connects people in the future and explains the solution with extensive help from the teacher or peers. <i>Information and Communication Technologies A.1.c.</i>	Imagines a technological solution that connects people in the future. Explains how the solution will be useful. <i>Information and Communication Technologies A.1.c.</i>	Imagines a creative technological solution that connects people in the future. Explains how the solution will improve how we live in great detail. <i>Information and Communication Technologies A.1.c.</i>
	Has difficulty connecting current technologies to the problems they solve and/or describing possible solutions to a future problem. <i>Science F.1.b.</i>	Connects current technologies to the problems they solve and explains future needs or problems with support when describing possible solutions. <i>Science F.1.b.</i>	Connects current technologies to the problems they solve using sound logic, and explains future needs or problems when describing creative solutions. <i>Science F.1.b.</i>
	Writes a narrative that includes a beginning, middle, and end with help from peers or the teacher. <i>Writing B.1.a.</i>	Writes a narrative that includes a clear beginning, middle, and end. <i>Writing B.1.a.</i>	Writes a detailed narrative that includes a thoughtful and cohesive beginning, middle, and end. <i>Writing B.1.a.</i>
	Makes improvements to writing after discussion with a peer only with help from the teacher. <i>Writing D.1.b., c.</i>	Makes improvements to writing after personal review and discussion with a peer. <i>Writing D.1.b., c.</i>	Makes thoughtful improvements to writing after personal review and discussion with a peer. Serves as a role model for peers in this area. <i>Writing D.1.b., c.</i>
Quality of Performance	Creates a drawing that does not clearly communicate the solution to a future connection challenge. <i>Visual Art A.2.c.</i>	Creates a detailed drawing that effectively communicates the solution to a future connection challenge. <i>Visual Art A.2.c.</i>	Creates and labels an especially detailed and thoughtful drawing that effectively communicates the solution to a future connection challenge. <i>Visual Art A.2.c.</i>
	Uses creativity to imagine life in the future with support from peers or the teacher.	Uses creativity to imagine life in the future.	Uses exceptional creativity to imagine life in the future and supports peers to do the same.
Life Skills	Collaborates with teammates but has difficulty showing respect for the ideas of teammates while coming to agreement. <i>Respect for Diversity</i>	Collaborates effectively by showing respect for the ideas of teammates while coming to agreement. <i>Respect for Diversity</i>	Collaborates effectively by showing respect for the ideas of teammates while coming to agreement. Takes on a leadership role and helps organize the team in this work. <i>Respect for Diversity</i>
	Has difficulty reflecting on positive feedback and suggestions when revising a design and/or piece of writing. <i>Accountability</i>	Reflects on positive feedback and suggestions when making improvements to a design and/or piece of writing. <i>Accountability</i>	Builds on positive feedback and suggestions when making thoughtful improvements to a design and/or piece of writing. <i>Accountability</i>





# CONNECTING WITH COMMUNITY







## SCAVENGER HUNT

Read the list of items to find in the newspaper. Work with your team. Write where you found the item in the newspaper. Find two other things that are interesting to you. Add them to the list.

PART OF NEWSPAPER	WHERE I FOUND IT
Headline	
Byline	
Weather	
Sports	
Advertisement	
Cartoons	





## YOU ARE INVITED

Complete the invitation to our final lesson below. Cut out the invitation. When you deliver the invitation, ask your family the questions at the bottom.

You're Invited

WHAT: \_\_\_\_\_

WHEN: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_

WHERE: \_\_\_\_\_

WHY: \_\_\_\_\_

Hope to see you there!

\_\_\_\_\_

I need your help. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_





## RASHAD'S CLASS NEWSPAPER

Read the story. Decide with the class the most important parts of the article.

Rashad's class is composing a newspaper. The students name the newspaper The Report. The class decides that the audience for the newspaper will be their families. Mr. Mohamed, their teacher, tells the class to write about a person in the community.

Rashad and his friends are worried. They want to be reporters, but they do not understand how to conduct an interview for their newspaper. Mr. Mohamed tells them not to worry. He will share his interview with them to help.

# THE REPORT

## HELPING MY NEIGHBORS

by Mr. Mohamed

Maria Mohamed is important in our community. She sells fruit at Corner Market. Mrs. Maria smiled when she was asked why she likes her job. She said people rely on her to find the best fruit for their families. She even saves special fruit for some of her customers.

Mrs. Maria hopes you will visit her during the day at Corner Market. She will save the best pears for your visit.

Rashad and his friends are glad Mr. Mohamed shares his interview with the class. It will be fun to interview a friend.

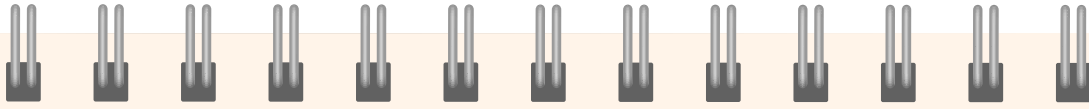
KEY

_____	_____	_____
_____	_____	_____
_____	_____	_____



## MY QUESTIONS AND ANSWERS

What do you want to know? What questions will help you find the answers?  
Record your questions in one column and your answers in the other.



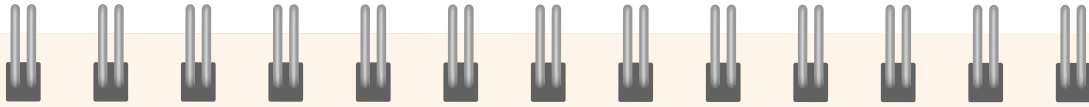
Interview notes with \_\_\_\_\_

QUESTIONS	ANSWERS



## COMMUNITY MEMBER INTERVIEW

What do you want to know? What questions will help you find the answers?  
Write your answers across from the questions.



Interview notes with \_\_\_\_\_

QUESTIONS	ANSWERS





## MY INTERVIEW

Review the answers to your questions. Decide in which order you will write your information. Use descriptive language so the reader better understands the person you interviewed.

Headline: \_\_\_\_\_

By \_\_\_\_\_

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## NEWS WE WANT TO READ

Read and discuss the list of ideas below that will interest a reader.  
Brainstorm a list of events to write about.

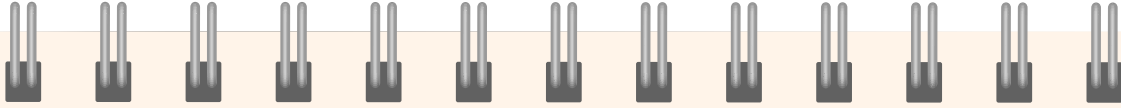
1. Events that are happening right now or news that is of interest to readers right now.
2. Events or situations that happen near the reader.
3. Unique or unusual events.
4. News that will affect a large number of readers.
5. People or groups of people that are well known.
6. Events where the outcome is not known.
7. Things we learn from science or technology.
8. Things that are important to the reader's lives and family.

Ideas for my article:



## PLAN FOR WRITING

Read all the information on the page before you begin.



My story is about: \_\_\_\_\_

*Underline the answers that apply.*

This story is important because:

- It is about something that is happening now.
- It is about something happening here in our classroom or school.
- It is about something unusual.
- It is about something we learned from science and technology.
- It is about something that is important to my readers or their families.

*Answer these questions about your story:*

1. Who or what is the story about? \_\_\_\_\_

2. What happened? \_\_\_\_\_

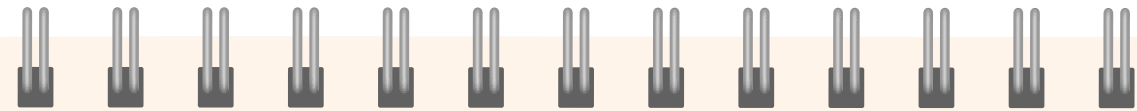
\_\_\_\_\_

\_\_\_\_\_

3. When did this happen? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



4. Where did this happen? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. Why is it important? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6. What details can you add to your story?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## MY NEWS ARTICLE

Use your information to write the rough draft of your article. Write a strong opening statement and strong closing statement. Add a headline and byline.

Headline: \_\_\_\_\_

By \_\_\_\_\_



## PUBLIC SERVICE MESSAGE

Look at the public service messages below. Why are these messages important?





## PLANNING A MESSAGE

Read the goals of a good public service message. Create your own advertisement.

Goals of your advertisement:

- The message is clear and easy to understand.
- The message is supported by facts.
- The audience is able to sympathize with those affected by the issue.

Some feedback I received:



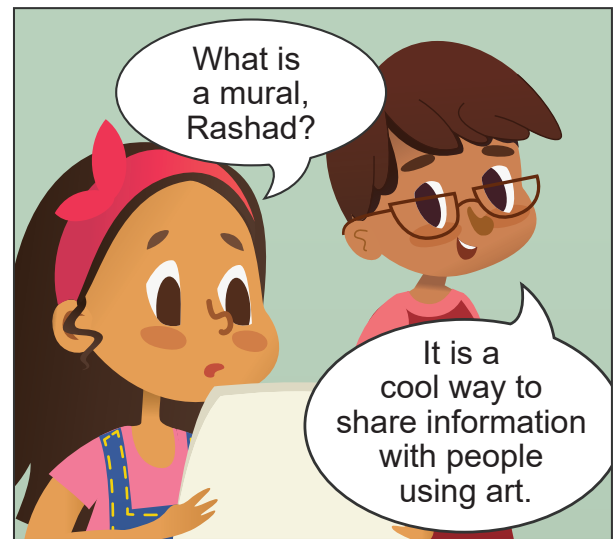
## SENDING A MESSAGE

Complete the final copy of your public service message.



## RASHAD'S MIXED-UP CARTOON

Rashad loves reading the newspaper. He especially likes that the cartoons tell a story through pictures. The pictures in this cartoon are out of order. Cut out each panel of the cartoon and place them in the correct order.

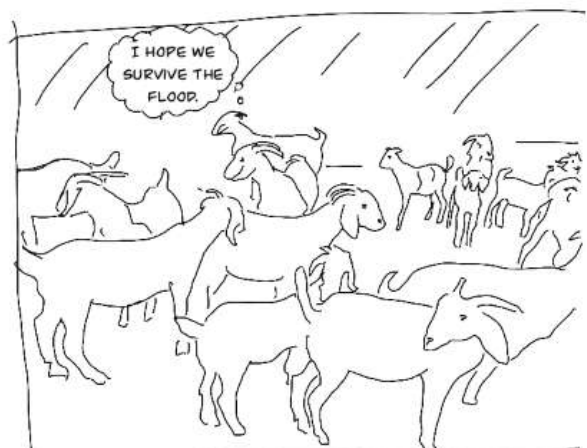




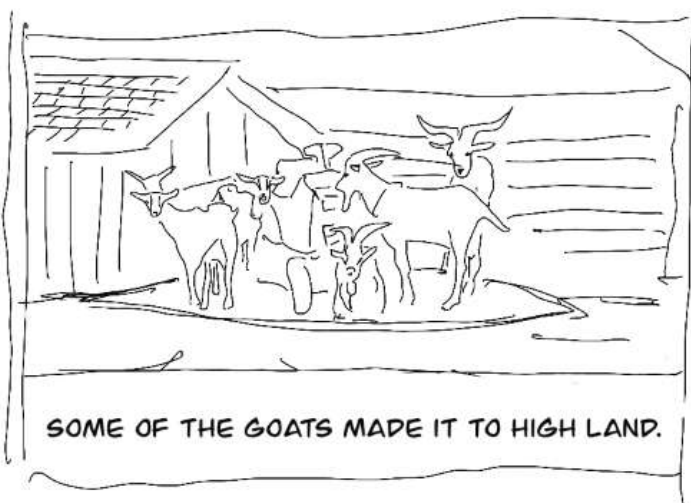


## GOATS AND MORE GOATS

With a partner, read the cartoon about how the environment affects a group of goats.



IT HAS BEEN RAINING FOR THREE WEEKS.





# PLANNING MY CARTOON

Answer each question.

What topic will your cartoon be about?

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Who are the characters in your cartoon?

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What is the setting and action in each panel of the cartoon?

Setting:	Setting:	Setting:	Setting:
Action:	Action:	Action:	Action:



## CARTOON TEMPLATE

Fill in each box to create your cartoon.



## NEWSPAPER TEAM ROLES

Read the descriptions of the roles and record who will do each.

ROLES	STUDENT ASSIGNED
<b>Editor</b>  The editor reviews the pieces selected to be sure there is a variety of topics or all of the pieces are about the same topic.	
<b>Graphic Designer</b>  The graphic designer adds additional drawings to the newspaper to go along with the pieces of writing selected.	
<b>Layout Specialist</b>  The layout specialist decides where each piece of writing will go in the newspaper.	
<b>Manager</b>  The manager oversees the work to ensure everyone understands their roles and the group completes the work on time.	



## NEWSPAPER PLAN

Follow the steps to create your group's newspaper.

**Step 1:** Decide on a name for your newspaper.

Newspaper name ideas:

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Final newspaper name: \_\_\_\_\_

**Step 2:** Select pieces of writing from your student books. Each student should contribute at least one piece.

PIECE OF WRITING	STUDENT WRITER
Interview	
Article	
Advertisement	
Cartoon	

**Step 3:** Review the pieces of writing and make any needed changes.

**Step 4:** Create final versions of pieces selected. Get a template from your teacher.

**Step 5:** Add your newspaper name to the first page. Then lay out and glue the writing on the front page.

**Step 6:** Lay out and glue the pieces on the inside pages.

**Step 7:** Add additional drawings or graphics.

**Step 8:** Number the pages of your newspaper.



## MURAL PHOTOS

Look at the pictures of murals.

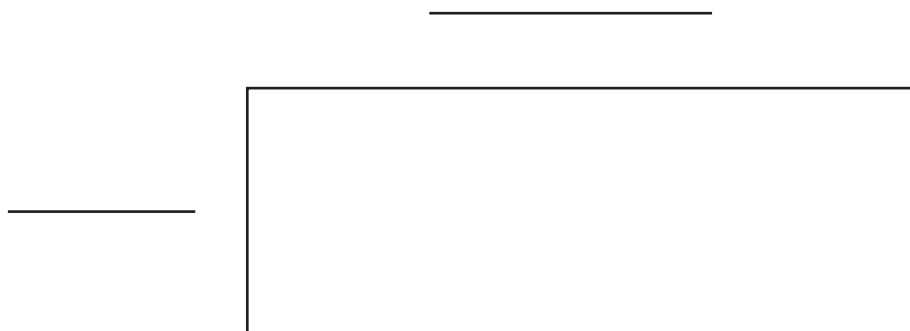






## MURAL MATH

To create the group mural, each student in your group will add their panel to the wall. All of the panels will be touching to create a large rectangle. Answer the questions to calculate how much space is needed for the group mural.



Record the length of one panel (piece of paper): \_\_\_\_\_

Record the width of one panel (piece of paper): \_\_\_\_\_

Record the area of your panel (piece of paper): \_\_\_\_\_

How many students are in your mural group?

Record this as the number of panels that will be part of your group mural: \_\_\_\_\_

Draw a rectangular grid to represent your group mural with the appropriate number of panels:

Calculate the perimeter of your rectangular grid: \_\_\_\_\_

Calculate the area of your rectangular grid: \_\_\_\_\_

If you are trying to find wall space that can hold your group mural, what measurements would be the most helpful?

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Share your perimeter and area with another student. Did you arrive at the same answers? Why or why not?

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## MURAL BRAINSTORM

Listen to your teacher for directions, then brainstorm ideas for your mural panel.

**Our Topic:** How \_\_\_\_\_ helps us connect to community.

Words that come to mind:

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____		

MY WORD	SYMBOL OR DRAWING



## MURAL TEMPLATE

Record your topic and the message you want to share with your mural panel. Sketch your mural panel in the box.

Topic: \_\_\_\_\_

What is the message? \_\_\_\_\_



## OUR MURAL FEEDBACK

Another student will review your mural design on this page. You will review their work in their student book.

Reviewer's name: \_\_\_\_\_

Mural topic: \_\_\_\_\_



I like your design because \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



I like your design because \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



One thing I would like to see is \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## MY SELF-ASSESSMENT

Read each statement. For each row, color the stars in the box that describes your effort.

	★	★ ★	★ ★ ★
<b>Academic Content</b>	★ I have difficulty designing a mural panel that communicates a message about our community.	★ ★ I can design a mural panel that communicates a message about our community.	★ ★ ★ I can design a mural panel that communicates a unique or especially thoughtful message about our community.
<b>Quality of Performance</b>	★ I have difficulty contributing my ideas and doing an equal share of the work when working in a group.	★ ★ I can contribute my ideas and do an equal share of the work when working in a group.	★ ★ ★ I can contribute my ideas and do an equal share of the work when working in a group. I show leadership in this area and ensure that others are able to contribute equally.
<b>Life Skills</b>	★ I have difficulty communicating about the work of my group with clarity.	★ ★ I can communicate about the work of my group with clarity.	★ ★ ★ I can communicate about the work of my group with exceptional clarity and detail.

# Rubric Assessment (for teacher use)

	Approaching Expectation (1)	Meeting Expectation (2)	Exceeding Expectation (3)
Academic Content	Applies knowledge of area to determine the size of the group mural with help from peers or the teacher. <i>Math D.1.a., 5.e.</i>	Applies knowledge of area to determine the size of the group mural. <i>Math D.1.a., 5.e.</i>	Applies knowledge of area to determine the size of the group mural. Assists peers in this work. <i>Math D.1.a., 5.e.</i>
	Includes minimal details in individual panel of the group mural, detracting from the overall message being communicated by the group. <i>Visual Art A.2.c.</i>	Includes details in individual panel of the group mural that help to communicate the intended message. <i>Visual Art A.2.c.</i>	Includes intentional and creative details in individual panel of the group mural that enhance and clarify the intended message. <i>Visual Art A.2.c.</i>
	Contributes minimally as group members present the mural and its intended message to the audience. <i>Visual Art B.1.a.</i>	Presents the mural and its intended message to the audience. <i>Visual Art B.1.a.</i>	Presents the mural and its intended message with exceptional clarity to the audience. Serves as a role model for peers in this area. <i>Visual Art B.1.a.</i>
	Communicates and visually highlights connections within the community through art with help from peers and the teacher. <i>Social Studies A.1.e., f.</i>	Communicates and visually highlights connections within the community through art. <i>Social Studies A.1.e., f.</i>	Communicates effectively and highlights connections within the community through creative visuals and graphics. <i>Social Studies A.1.e., f.</i>
Quality of Performance	Contributes minimally to the work of the group.	Contributes ideas and does a fair share of the group work.	Contributes ideas and does a fair share of the group work. Ensures that all group members have an equal voice and leads the group in this work.
	Supports the creativity of peers when creating a group mural but may need support to incorporate agreed-upon common elements in the individual panel.	Supports the creativity of peers when creating a group mural and effectively incorporates agreed-upon common elements in the individual panel.	Supports the creativity of peers when creating a group mural and incorporates agreed-upon common elements with exceptional creativity and unique ideas.
Life Skills	Listens to others' opinions and ideas with encouragement from peers or the teacher. <i>Respect for Diversity, Collaboration</i>	Listens to others' opinions and ideas, and contributes ideas for how multiple perspectives can be combined in the final product. <i>Respect for Diversity, Collaboration</i>	Listens to others' opinions and ideas, and leads the group in ensuring that all group members' opinions are honored. <i>Respect for Diversity, Collaboration</i>
	Explains the intended message of the mural created by his/her group with help from peers or the teacher. <i>Communication</i>	Explains the intended message of the mural created by his/her group with clarity. <i>Communication</i>	Explains the intended message of the mural created by his/her group with exceptional clarity. Serves as a role model for peers in this area. <i>Communication</i>

## ARTIST CREDIT

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